

REPORT

MEDICAL OFFICER OF HEALTH

WITH STATISTICAL INFORMATION
AND SUMMARY OF REPORTS OF DISTRICT
MEDICAL OFFICERS OF HEALTH, &c.

The seal of the County Palatine of Lancaster is depicted. It features a central shield with a lion passant guardant, a cross fleury, and a chief with three fleurs-de-lis. The shield is encircled by a ribbon bearing the text 'COUNTY PALATINE OF LANCASTER'. Above the shield is a crown with a cross fleury on top. The entire seal is set against a background of horizontal lines.

MCMIII

PUBLIC HEALTH
DEPARTMENT

COUNTY PALATINE OF LANCASTER.

REPORT

OF THE

MEDICAL OFFICER OF HEALTH

FOR THE YEAR 1902.

WITH STATISTICAL INFORMATION
AND SUMMARY OF REPORTS OF DISTRICT
MEDICAL OFFICERS OF HEALTH, &c.

(Presented to the County Council, November 5th, 1903.)



PRESTON :

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MCMIII

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PUBLIC HEALTH COMMITTEE

(1903).

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REPORT

OF THE

MEDICAL OFFICER OF HEALTH

For the Year ending December 31st, 1902.

*To the Right Hon. the Chairman and Members of the County
Council of the County Palatine of Lancaster.*

GENTLEMEN,

I have the honour to present my Fourteenth Annual Report on the health and sanitary condition of the Administrative County, together with a summary of each Annual Report received from District Medical Officers of Health.

It is pleasing to report that the death-rate for the whole County, corresponding to 15·26 per 1,000, was lower than in any previously recorded year, and 2·42 below the mean of the 10 years 1892-1901. The death-rate of infants under one year, equal to 139 per 1,000 births, is also unusually favourable, as well as the deaths from the principal zymotic diseases, which represent a rate of 1·51 per 1,000, as compared with 2·09, the mean of the preceding decade.

I may also refer to the decline of the phthisis death-rate from 1·19 per 1,000, the mean of the 10 years 1892-1901, to 0·92, the lowest rate ever recorded in this County. Although much has been done by the improved sanitary conditions to reduce the mortality from this preventible disease, a further reduction may be hoped for when County Sanatoria are available for the treatment and isolation of consumptive patients.

The epidemicity of small-pox in many of the County districts during the whole of the year augmented the work of Local Authorities ; fortunately hospital accommodation was available for the isolation of the cases which occurred, and by carefully carrying out the usual precautionary measures, including quarantine of contacts, disinfection, vaccination, and re-vaccination, the spread of the disease has not been allowed to assume alarming proportions. It is satisfactory to observe from the Local Government Board Report, 1901-2, recently issued, that in this County the percentage of unvaccinated children has gradually declined from 24·1 in 1896 to 11·4 in 1900, although it averaged only 6·0 during the five years 1883-7.

The whole of the 135 County districts are reported on, viz., 20 municipal boroughs, 96 urban districts, and 19 rural districts. Of the reports received 103 were printed, 11 typewritten, and the rest in manuscript.

The special reports supplied by Medical Officers of Health, under the Local Government Act, 1888, Section 19, numbered 130, as compared with 48 in the previous year ; these chiefly referred to the occurrence of small-pox and other infectious diseases, and the precautionary measures, including school closure, taken thereon. Monthly returns of deaths, and cases of infectious disease notified or ascertained, were received from 132 districts. Three Authorities, viz., Blackpool (B.), Lancaster (B.), and Little Crosby still decline to supply this desirable information.

From the Exchequer Contribution Account payments have been made towards the salaries of sanitary officials under Section 24 of the Local Government Act. Claims are now presented by 118 Authorities, *i.e.*, 16 boroughs, 83 urban districts, and 19 rural districts. The total payments during the year amounted to £9,072 15s. 8d., of which Medical Officers of Health received £4,123 1s. 5d. and Sanitary Inspectors £4,949 14s. 3d.

Increased attention has been paid to the enforcement of the Acts relating to food adulteration; the total number of prosecutions amounted to 121, with 96 convictions, against 92 prosecutions and 78 convictions in the previous year. I am pleased to refer to the great assistance derived from the Regulations which the Board of Agriculture made operative on the 15th of May, 1902, in exercise of the powers conferred on them by Section 4 of the Sale of Food and Drugs Act, 1899. By these Regulations butter containing 16 per cent. of water is presumed to be not genuine until the contrary is proved.

I am, Gentlemen,

Your obedient Servant,

EDWARD SERGEANT.

Preston, October 22nd, 1903.

THE COUNTY.

Area and Population.—During the year 1902 the following changes took place in the constitution of the districts within the Administrative County:—

Garston.—The whole of this urban district was absorbed by the City of Liverpool on the 9th of November, 1902, and the Administrative County was therefore reduced as under:—

Area in Acres.	Census Population, 1901.	Estimated Population, 1902.	Rateable Value. £
1,673	17,289	19,100	111,852

Morecambe.—By a Charter dated 24th of June, 1902, this district became a Municipal Borough.

The area of the Administrative County dealt with in this Report continued the same as at the end of the previous year, viz., 1,090,928 statute acres until the withdrawal of Garston as above-mentioned, when the area was reduced by 1,673 acres, leaving 1,089,255 as the total acreage of the County.

The population according to the estimate of Medical Officers of Health of the districts under report to the middle of 1902 corresponded to 1,844,674, and on this figure the various rates are calculated. It may be stated that the estimate given of the County population is exclusive, as far as can be ascertained, of the residents of public institutions—situated in the Administrative County—which are used for the reception of persons from districts outside its area. After the inclusion of Garston within the boundary of the City of Liverpool, the County population showed a further loss of 19,100 persons.

The districts reported on number 135, viz., municipal boroughs 20, urban districts 96, and rural districts 19, but at the end of the year the County had 134 districts, one urban district having been lost as already stated. Particulars as to the area, population, and persons to an acre of the districts under review are given in the following table:—

	Area in Acres, (per Census Returns).	Population Estimated by Medical Officers of Health, 1902.	Persons per Acre.	Acres per Person.
Municipal Boroughs ...	86,745	618,059	7·12	0·14
Urban Sanitary Districts	276,857	994,329	3·59	0·27
Rural Sanitary Districts	727,326	232,286	0·31	3·13
Administrative County..	1,090,928	1,844,674	1·69	0·59

Births registered in the 135 districts of the Administrative County amounted to 49,530—in the urban districts 43,458, and in the rural districts 6,072,—equal to an increase of 932 births as compared with the previous year.

The sex of the children born is given in the table below:—

	Males.	Females.	Total.
Urban Districts	22,734	20,724	43,458
Rural Districts	3,033	3,039	6,072
Administrative County ...	25,767	23,763	49,530

The birth-rate, corresponding to 26·85 per 1,000—26·95

urban and 26·14 rural,—shows an increase of 0·28 over 1901. The birth-rates (see Tables I. and III., page 262, *et seq*) varied from 41·2 in Ince-in-Makerfield, 41·1 Standish-with-Langtree, 39·2 Pemberton, 38·9 Haydock, 38·9 Gorton, 38·9 Leigh (R.), 38·8 Ashton-in-Makerfield, 38·3 Abram, and 38·1 Golborne, to 17·2 Clitheroe (R.), 16·4 Wardle, 15·5 Heaton Norris, 15·4 Allerton, 14·9 St. Annes-on-the-Sea, 13·6 Childwall, and 10·5 Grange. The Table below gives the County birth-rates and those of England and Wales during the years 1892-1902 :—

Districts.	Rate per 1,000 of the Population.										
	1902.	1901.	1900.	1899.	1898.	1897.	1896.	1895.	1894.	1893.	1892.
Administrative County	26·85	26·57	26·80	27·09	27·62	28·45	28·73	29·82	29·19	30·95	30·70
Urban Districts	26·95	26·78	26·96	27·31	27·89	28·65	29·11	30·23	29·49	31·35	31·11
Rural Districts	26·14	25·13	25·72	25·53	25·80	27·29	26·62	27·57	27·70	28·94	28·01
England and Wales	28·6	28·5	28·5	29·3	29·4	29·7	29·7	30·3	29·6	30·8	30·5

Compared with the average of the past decade the birth-rate shows a decrease of 1·74, urban 1·93 and rural 0·69. The Registrar-General says that “the birth-rate in England and Wales in 1902 was 28·6 per 1,000 of the population, which is 0·1 per 1,000 higher than the rate in 1901, but lower than that in any other year on record; compared with the average in the ten years 1892-1901 the birth-rate in 1902 shows a decrease of 1·0 per 1,000.”

Information has been obtained from 28 districts which shows that 455 illegitimate births took place, and 108 or 23 per cent. of the infants died before attaining the age of one year, as compared with a percentage of deaths of illegitimate infants to births of 30 in 1901 and 33 in 1900. In the whole County in 1902 the percentage of deaths under one year to the total births was 13·9. The mortality of illegitimates was most marked in Ashton-in-Makerfield, where of 14

children born 9 died ; Aspull, 22 births, 7 died ; Colne (B.), 33 births, 10 died ; Hindley, 33 births, 10 died ; and West Lancashire (R.), 17 births, 6 died.

Deaths.—The number of deaths registered in the Administrative County was 28,164, or 1,618 less than in the previous year ; and the excess of births over deaths amounted to 21,366, against 18,816 in 1901. Of the total deaths, 14,311—urban 12,630, rural 1,681—occurred among males, and 13,853—urban 12,262, rural 1,591—among females. The ages at the time of death were as below :—

Under 1 Year.	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 65.	65 and upwards.	Total.
6,928	3,282	1,325	1,326	9,285	6,018	28,164

As in 1901, the deaths taken cognisance of by Medical Officers of Health refer to the nett deaths actually belonging to each district, and in accordance with the instructions given on the forms issued by the Local Government Board, all deaths occurring in public institutions of persons not belonging to the district are excluded. This arrangement allows the exclusion of a large number of deaths from the local statistics ; for instance, in the case of Fulwood 172 workhouse, &c., deaths are excluded, and, from the urban districts of Wardle and Withington, for a similar reason, 177 and 703 deaths respectively are excluded. The majority of such deaths belong to county boroughs, and a small proportion to districts within the Administrative County. These deaths are supposed to be allocated to the districts to which they belong, but, unfortunately, no proper system is in vogue for securing their correct allocation. It may also be pointed out that the effect of including in the statistics of local authorities deaths of non-residents, unless occurring in public institutions, has considerably increased the death-rates of certain health resorts much frequented by visitors, and reference to such increase will be found in the appended summarised reports. In the case of Blackpool (B.), for instance, the general death-rate (14·9)

compares favourably with 1901 (16·4), and would be further reduced to 13·01 if the deaths of visitors to the number of 101, of whom 63 were resident less than one month, had been excluded. As another instance, the gross death-rate of Southport (B.) was 15·3, against 16·0 in the previous year. After deducting the deaths of 103 visitors who came into the town in a precarious state of health, and died after only a short stay, and adding the deaths belonging to the borough occurring in public institutions beyond the boundary, a corrected death-rate of 13·82 per 1,000 is obtained.

The following Table gives a comparative statement of the birth and death rates :—

	Birth-rate per 1,000 of the population.	Per 1,000 of the Population.		Death-rate from the seven principal Zy- motic Diseases.	Rate of Infant Mor- tality measured by the proportion of deaths of Infants under 1 year to 1,000 births.
		Urban Death- rate.	Rural Death- rate.		
England and Wales	28·6	*16·3	†15·3	1·64	133
		16·3			
76 large English Towns...	30·0	17·4	...	2·12	145
Administrative County of Lancaster	Urban...	26·95	15·43	1·54	143
	Rural ...	26·14	... 14·08	1·27	116
Urban & Rural Districts combined... ..	26·85	15·26		1·51	139

* Refers to the 76 great towns and the 103 smaller towns.

† Refers to the remainder of the country, including the small urban districts and the rural districts.

The male births again exceeded the female births—for the year under report the increase was equal to 4·05 per cent.; while the proportion of male deaths was 1·63 per cent. higher than that of the females. The excess of male over female deaths in the urban districts corresponded to 1·47, and in the rural districts 2·75 per cent. In 1901 the urban mortality of males was 1·73 per cent. higher than that of females, and in the rural districts 3·47 per cent.

The County death-rate was 15·26 per 1,000, against 16·28 in 1901, showing a decrease of 1·02, and was 2·42 below (17·68) the mean of 10 years 1892-1901. In the urban districts the rate averaged 15·43, and in the rural 14·8, equal to a diminution of 1·15 and 0·13 respectively as compared with the previous year. It is pleasing to observe that the death-rate was lower than in any previously recorded year, and 1·1 below the average of England and Wales (16·3). The Table below compares the County deaths with those of England and Wales during the years 1892-1902:—

Districts.	Rate per 1,000 of the Population.										
	1902.	1901.	1900.	1899.	1898.	1897.	1896.	1895.	1894.	1893.	1892.
Administrative County	15·26	16·28	17·19	17·60	16·58	17·48	17·38	19·16	16·16	19·97	19·0
Urban Districts	15·43	16·58	17·46	17·88	16·80	17·82	17·76	19·63	16·42	20·37	19·34
Rural Districts.	14·08	14·21	15·26	15·65	15·09	15·55	15·25	16·57	14·87	17·94	17·31
England and Wales.....	16·3	16·9	18·3	18·3	17·6	17·4	17·1	18·7	16·6	19·2	19·0

The Registrar-General says, referring to England and Wales: “The death-rate in 1902 was 16·3 per 1,000, which is the lowest rate on record; the only previously recorded rates below 17 per 1,000 having been 16·5 in 1894, and 16·9 in 1901; as compared with the average rate in the 10 years 1892-1901 the death-rate in 1902 shows a decrease of 1·6 per 1,000.” In 76 of the large English towns the death-rate was

17·4, and in the remainder of the County, including the small urban districts and the rural districts, it averaged 15·3.

The death-rates of the County districts varied from 22·7 in Ince-in-Makerfield, 20·1 Skelmersdale, 19·8 Prescott, 19·5 Ashton-in-Makerfield, 19·3 Abram, 19·3 Aspull, 19·3 Lees, 19·2 Upholland, 19·1 Ashton-under-Lyne (B.), and 19·0 Gorton, to 10·6 in Irlam, 10·3 St. Annes-on-the-Sea, 9·5 Heaton Norris, 9·1 Little Woolton, 7·7 Withnell, 6·9 Little Crosby, and 4·5 Childwall.

Infantile Mortality.—The rate for the County was unusually favourable, being the lowest recorded since 1894. As compared with the previous year the proportion of deaths under one year to 1,000 births was 139—urban 143, rural 116—against 161—urban 167, rural 118—and the saving of infant lives amounted to 920. Throughout England and Wales the infant death-rate was exceptionally favourable and 6 less than the County infant rate, but in the urban and rural districts it exceeded the County average. The Registrar-General states that the rate of mortality among infants under one year of age to 1,000 births was, with the single exception of a rate of 130 in 1881, the lowest on record, and equivalent to 21 per 1,000 below the mean for the ten years 1892-1901. The infantile rates for the whole of the County compared with those of England and Wales for the years 1892-1902 are shown in the following Table :—

Districts.	Deaths of Children under 1 Year to 1,000 Births.										
	1902.	1901.	1900.	1899.	1898.	1897.	1896.	1895.	1894.	1893.	1892.
Administrative County	139	161	162	175	168	169	155	171	134	177	150
Urban Districts	143	167	167	181	173	174	161	178	138	183	155
Rural Districts.	116	118	123	134	130	138	121	127	109	145	124
England and Wales	133	151	154	163	161	156	148	161	137	159	148

It is generally admitted that the meteorological conditions which prevailed in the summer proved exceptionally favourable to young children, probably owing to the low temperature and excess of rain being antagonistic to the growth of organisms inimical to infant life and productive of such diseases as enteritis, epidemic diarrhœa, &c. These conditions, however, are not altogether explanatory of the high death-rates which constantly prevail in certain county districts and low rates in others; for instance, 219 in Wardle, 200 Farnworth, 198 Leyland, 194 Padiham, 192 Crompton, 190 Ince-in-Makerfield, 188 Colne (B.), 185 Pemberton, 181 Hindley, and in Fylde (R.) 74, Warrington (R.) 74, Turton 72, Whitefield 71, Clitheroe (R.) 69, Garstang (R.) 67, St. Annes-on-the-Sea 59, Allerton 58, Croston 21, and nil in Childwall and Little Crosby.

The causes of a high infant mortality are to a large extent remediable, and it ought to be considered disgraceful to any Authority to tolerate a rate exceeding 100 deaths under one year per 1,000 births, while a very much lower rate might reasonably be expected. Filthy environment and the widespread ignorance of mothers of the elementary principles which ought to guide them in the feeding, clothing, and management of their young children are productive of an immense loss of life, which goes on year after year unheeded by the public or by those whose duty it is to combat in every possible way conditions depreciatory to the health of the population under their care.

The reports of Medical Officers of Health contain many references to this subject, and the following may be taken as illustrating the opinion generally held:—

ABRAM. Improper and irregular feeding, with insanitary surroundings, are largely associated with the infantile mortality.

ACCRINGTON (B.). The Medical Officer of Health refers to the practice of children of tender age being habitually carried

out in the early mornings to be nursed while their mothers go to work, and he is of opinion that a crèche could be worked and made self-supporting, and would bear a rich harvest in the saving of infant life.

ASHTON-UNDER-LYNE (B.). The two main factors in the infantile mortality are—"(*a*) the housing of the people in overcrowded and insanitary dwellings, (*b*) the appalling ignorance of young mothers of the working class as to how to feed and manage their infants."

AUDENSHAW. Infant deaths were apparently influenced by "irregular and injudicious feeding, uncleanliness, and the nursing-out system."

BACUP (B.). Dr. Brown (Medical Officer of Health), refers to the ignorance of mothers in regard to feeding and clothing their offspring, to early marriages, and to the fact that many mothers go out to work at the mills.

DENTON. The infantile rate might be further reduced by regular and judicious feeding of infants, with more attention to cleanliness, and suitable clothing.

ECCLES (B.). "As fully 80 per cent. of the deaths of infants are caused by improper feeding," the Health Committee decided to issue and circulate a leaflet giving instructions as to the feeding and general care of young children.

FARNWORTH. The heavy infantile mortality is attributed to the want of proper feeding and nursing.

HEYWOOD (B.). Many of the infant deaths were due to "improper feeding, exposure to cold and wet, and improper nursing." The "nursing-out system" is described as a source of danger, and it is suggested that instruction in the hygiene of infant life should be given in all day schools.

HINDLEY. The infantile mortality still remains high ; lack of cleanliness and improper feeding are two important factors in swelling this rate. Dr. Chronnell mentions that he recently saw a child a few months old suffering from diarrhoea, and the mother told him she was feeding it on cheese—the only remedy that she knew !

INCE-IN-MAKERFIELD. In reporting on the infantile mortality the usual references are made to bad nursing, careless feeding, and the want of personal cleanliness.

KEARSLEY. The Medical Officer of Health believes that the instructions issued as to the need for cleanliness and care in the feeding of young children must have had some effect.

LANCASTER (B.). "A large number of infantile deaths are due to the lamentable ignorance which prevails amongst the mothers of a certain portion of the community, not only as to the rearing of their children, but also to the treatment of themselves during the parturient state."

LEES. The rate of infant mortality is, no doubt, influenced by the great ignorance shown by many parents as to the care necessary for the proper bringing up of young children.

LITTLE HULTON. Dr. Marsh (Medical Officer of Health) in referring to the low infantile mortality, says :—"I trust for even better results in the future, now that parents are being made aware of the great necessity of personal cleanliness, sanitary surroundings, and the proper feeding, clothing, &c., of young children."

PEMBERTON. The infant rate might be considerably reduced if young children were not so much exposed to the night air and inclement weather.

THORNTON. In many instances mothers display a lack of knowledge and attention to the ordinary rules of health and dieting towards their offspring.

BURY (R.). The infant rate would probably be materially diminished if the mother ceased working in the mills earlier in pregnancy and did not return to work so soon after the birth of the child.

The Seven Principal Zymotic Diseases, viz., small-pox, measles, scarlet fever, diphtheria and membranous croup, whooping cough, fever, and diarrhoea, gave rise to 2,791 deaths, or 9·9 per cent. of the total deaths from all causes,

against a percentage of 12·7 last year, 12·6 in 1900, 13·5 in 1899, and 11·4 in 1898. There is the greatest satisfaction in drawing attention to the fact that from preventible diseases alone a saving of 1,010 lives has been effected as compared with last year, and on the assumption that there are 20 cases of illness to one zymotic death, it is obvious that the decrease in sickness from these causes must have been enormous. The disease which contributed most largely to the improved zymotic rate was undoubtedly epidemic diarrhoea, which, with zymotic or epidemic enteritis, was credited with only 519 deaths, as compared with 1,752 in the preceding year; increases, however, were observed in respect of measles, scarlet fever, and small-pox. The following Table gives the zymotic death-rates for 1902 compared with the 10 years 1892-1901:—

Year.	ANNUAL DEATH-RATE PER 1,000.							
	Seven Principal Zymotic Diseases.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria and Membranous Croup.	Whooping Cough.	"Fever" (Typhoid, Typhus, & Continued Fever).	Diarrhoea.
1892	1·74	0·03	0·26	0·25	0·12	0·45	0·20	0·39
1893	2·85	0·04	0·58	0·32	0·13	0·25	0·28	1·21
1894	1·49	0·02	0·23	0·27	0·12	0·29	0·22	0·32
1895	2·42	0·009	0·50	0·23	0·10	0·38	0·23	0·95
1896	1·94	0·005	0·49	0·24	0·09	0·36	0·23	0·48
1897	2·14	...	0·66	0·15	0·08	0·27	0·19	0·77
1898	1·89	0·0005	0·25	0·10	0·07	0·19	0·26	1·00
1899	2·37	0·0005	0·44	0·18	*0·18	0·26	0·24	1·05
1900	2·07	0·0015	0·43	0·18	0·26	0·37	0·20	0·60
1901	2·07	nil.	0·18	0·18	0·34	0·20	0·20	0·95
Average 10 years	2·09	0·0106	0·40	0·21	0·14	0·30	0·22	0·77
1902	1·51	0·0119	0·35	0·20	0·30	0·19	0·16	0·28

* Membranous Croup included for the first time.

The County rate corresponded to 1·51 as compared with 2·07 last year, while the urban rate was 1·54, and the rural rate 1·27. The Registrar-General estimates the zymotic rate for England and Wales at 1·64 per 1,000 of the population, and 2·12 for the 76 great English towns. The appended Tables I. and III. give the zymotic death-rate for each of the County districts, and below are tabulated the rates from the seven principal zymotic deaths for the year under review :—

	ANNUAL DEATH-RATE PER 1,000.							
	Seven Principal Zymotic diseases.	Small-pox.	Measles	Scarlet fever.	Diphtheria and Membranous Croup.	Whooping Cough.	"Fever" (Typhoid, Typhus, & Continued Fever).	Diarrhoea.
Administrative County of Lancaster.....	1·51	0·011	0·35	0·20	0·30	0·19	0·16	0·28
Urban Sanitary Districts	1·54	0·013	0·37	0·20	0·30	0·18	0·16	0·30
Rural Sanitary Districts	1·27	0·004	0·24	0·19	0·29	0·23	0·15	0·14
England and Wales..	1·64	0·08	0·38	0·15	0·23	0·29	0·13	0·38

The zymotic death-rates were highest in the following districts :—Aspull 5·24, Ashton-in-Makerfield 3·81, Haydock 3·65, Swinton and Pendlebury 3·45, Abram 3·27, Atherton 3·02, Ince-in-Makerfield 2·83, Adlington 2·82, and Prescott 2·8, while low rates prevailed in Clitheroe (B.) 0·52, Tottington 0·49, Waterloo-with-Seaforth 0·49, Church 0·46, Poulton-le-Fylde 0·44, Leyland 0·43, Whitworth 0·41, Garstang (R.) 0·38, Fulwood 0·34, Carnforth 0·32, Withnell 0·29, Birkdale 0·26, Heaton Norris 0·20 ; and no zymotic deaths were recorded in Childwall, Grange, Little Crosby, or Little Woolton.

Small-pox of a somewhat mild type spread epidemically, and caused more attacks than in any year since 1893. Altogether 436 came under observation, of which 22 proved fatal.

From the following Table it will be seen that the prevalence of the disease has almost continuously increased from the first month of the year:—

	Cases.	Deaths.	
January	2	—	} 72 cases, 4 deaths.
February	8	—	
March	62	4	
April	22	3	} 48 „ 4 „
May	22	1	
June	4	—	
July	26	1	} 81 „ 2 „
August	17	1	
September ...	38	—	
October	66	3	} 235 „ 12 „
November ...	65	4	
December ...	104	5	

Since 1890, when correct statistics for the Administrative County became available, the following cases and deaths from small-pox have occurred:—

1890	...	...	1 case,	No death.
1891	...	...	2 cases,	„
1892	...	...	612 „	70 deaths.
1893	...	...	1038 „	84 „
1894	...	...	259 „	25 „
1895	...	...	100 „	19 „
1896	...	...	83 „	10 „
1897	...	...	3 „	No death.
1898	...	...	6 „	1 death.
1899	...	...	16 „	1 „
1900	...	...	59 „	3 deaths.
1901	...	...	6 „	No death.
1902	...	...	436 „	22 deaths.

The disease spread rapidly and attacked 54 districts (48 urban and 6 rural), as compared with 3 districts affected in the previous year. The greatest prevalence was attained as under :—

Ashton-under-Lyne (B.)	...	22 cases, No death.
Brierfield	... ..	20 „ „
Chorley (B.)	... ..	25 „ 4 deaths.
Colne (B.)	... ..	28 „ No death.
Crompton	... ..	28 „ 2 deaths.
Nelson (B.)	... ..	130 „ 7 „
Padiham	... ..	39 „ 2 „

The death-rate from small-pox corresponded to $\cdot 011$ per 1,000 of the County population, as compared with $\cdot 08$ for the whole of England and Wales. The percentage of deaths among persons attacked was low, and equivalent to only 5 per cent. From the Table below, of 406 cases concerning which information was obtainable, it appears that among the vaccinated the case rate of mortality at all ages was 3·4 per cent., against a percentage of 9·0 among the unvaccinated and persons showing no signs of vaccination :—

Age.	Vaccinated.			Unvaccinated or Doubtful.			Total.		
	Cases.	Deaths.	Mortality per cent.	Cases.	Deaths.	Mortality per cent.	Cases.	Deaths.	Mortality per cent.
0-5 years	2	...	...	30	5	16·6	32	5	15·6
5-10 „	2	...	...	44	2	4·5	46	2	4·3
10-15 „	5	...	...	29	1	3·4	34	1	2·9
15-20 „	13	...	...	8	...	...	21	...	...
20-25 „	22	...	...	1	...	...	23	...	...
25-35 „	95	1	1·0	14	1	7·1	109	2	1·8
35-45 „	59	2	3·3	10	2	20·0	69	4	5·7
45-55 „	40	3	7·5	6	2	33·3	46	5	10·8
55-65 „	18	2	11·1	1	...	...	19	2	10·5
65 years & over..	7	1	14·2	...	...	...	7	1	14·2
All ages	263	9	3·4	143	13	9·0	406	22	5·4

Of the preventive measures taken to restrain the spread of small-pox most reliance was placed on vaccination, and abundant evidence has from time to time been afforded of its protective value and power to modify the severity of an attack. Isolation of small-pox cases in hospitals is essential as an auxiliary to vaccination, but it is no substitute for it, and the only way to defy small-pox is by having recourse to vaccination and re-vaccination.

Under the age of 15 years, when primary vaccination is most protective, there were only 9 attacks—none fatal,—as compared with 103 attacks—8 fatal—among the small proportion of the population unprotected by vaccination. As age advances the protection due to vaccination in infancy diminishes, although the power of reducing the severity of an attack remains more or less through life, and this accepted experience is in accordance with the above tabulated information concerning small-pox.

The importance attached to vaccination by the Local Government Board is apparent from their recently issued memorandum which directs the Medical Officer of Health on the appearance of disease in his district, to secure the vaccination of any persons who may have been exposed to the infection, and with a view to the promotion of vaccination and re-vaccination it is important that there should be cordial co-operation between the officers of the Sanitary Authority and the public vaccinators and vaccination officers in carrying out the requisite precautionary measures. Further, the Board suggests that when the vaccination officer learns of the importation of small-pox he “should immediately make inquiries (if need be from house to house) as to vaccination throughout the locality; and he should—besides his express duty of securing that all children who are unvaccinated without legal excuse shall be vaccinated as soon as possible—impress on the parents of unvaccinated children the extreme danger, under the circumstances, of delaying the vaccination, and represent, as

far as he has opportunity, to adolescents and adults who have not been successfully re-vaccinated within the last 10 years, the importance of re-vaccination.”

In my report for the first quarter of the year attention was directed to the fact that the number of persons who neglected re-vaccination, and consequently became susceptible to small-pox had rapidly increased. This was owing to the immunity from small-pox experienced during the past few years, and the danger had been appreciably added to by the facilities afforded by the Legislature to the deluded or ignorant conscientious objectors for obtaining exemption certificates.

Hospital isolation, as a precautionary measure, was adopted in 407 or 91 per cent. of the total cases reported, and it is satisfactory to observe that such accommodation, either of a temporary or permanent character, is now available for almost every district within the Administrative County. Very careful attention has been paid by the officials of Local Authorities, in whose districts small-pox appeared, to disinfection, quarantine, and other precautionary measures for restraining the spread of the disease, as may be seen on referring to the appended digests of affected districts. It will also be observed that vagrants as usual played an important part in the dissemination of small-pox, and they distributed the disease widely in workhouses and common lodging-houses. “Contacts” have had to be quarantined by the Public Authorities at considerable expense, and even then difficulties have been experienced in securing re-vaccination. The same trouble occurred in 1893, when the health of this County was seriously menaced from the same source, and I then recommended that power should be given to Local Authorities to re-vaccinate, and, if necessary, to detain for quarantine purposes all vagrants. Further, each vagrant should be required to possess a certificate of registration and a health certificate after medical examination, and should be required to produce them on the demand of any police officer or sanitary official.

References to the tramp nuisance are contained in the Reports received from Ashton-under-Lyne (B.), Blackpool (B.), Chorley (B.), Crompton, Eccles (B.), Kirkham, Lancaster (B.), Leigh (B.), Padiham, Radcliffe, Royton, Rawtenstall (B.), West Lancashire (R.), Whiston (R.), &c.

Measles prevailed extensively, and gave rise to 653 deaths, against 332 last year, 857 in 1900, and 862 in 1899. The County death-rate corresponded to 0·35 per 1,000, in the urban districts 0·37, and in the rural districts 0·24. The average rate for the whole of England and Wales, equal to 0·38, exceeded the rate for the Administrative County by ·03, while in the 76 great towns of England it was ·14 higher. The rate for 1902 was also ·05 below the County mean of the preceding decade (·40). From the districts making monthly returns of measles 607 deaths occurred as under :—

1st Quarter.	2nd Quarter.	3rd Quarter	4th Quarter.
January ... 45	April 56	July 49	October ... 26
February.. 77	May 68	August ... 52	November. 23
March ... 50	June 78	September. 16	December. 67
172	202	117	116

In 36 districts there was an absence of deaths from measles, against 71 districts in 1901, and 39 in 1900. The following districts had the highest death-rates from the disease :—Ashton-in-Makerfield 2·19, Droylsden 1·69, Colne (B.) 1·65, Aspull 1·54, Brierfield 1·46, Abram 1·40, Norden 1·27, Padiham 1·06, Gorton 0·98, Standish-with-Langtree 0·93, Haydock 0·91, Horwich 0·91, Lunesdale (R.) 0·86, and Skelmersdale 0·83.

It is generally admitted that schools are liable from their bringing large numbers of children together to act as centres

of rapid and extensive propagation of infectious disease among the pupils. As a precautionary measure, therefore, not only children themselves suffering from measles, but also all members of the invaded households should be excluded from school until danger of their communicating the disease to others has passed, and as suggested by Dr. Theodore Thomson, of the Local Government Board, children should not be re-admitted to school from houses that have been invaded by measles in the absence of sufficient evidence as to their freedom from infection. For this purpose a medical certificate would suffice. In the absence of this method a period may be named during which children are not to be re-admitted to school from invaded houses. When these means fail to effectually control the spread of measles, school closure may with advantage be prescribed, and during the year 63 Sanitary Authorities resorted to this precautionary measure. It is well to remember that school closure should not be adopted while there is reasonable prospect of controlling measles by other means; nor, on the other hand, should it be postponed until prospect of benefit from this measure has well nigh disappeared. Further, instruction of the public as regards measles may be distributed with a view to arousing a proper appreciation of the death-dealing effects of measles on the infant population.

Scarlet Fever was credited with 9,153 cases notified, and 374 deaths against 8,767 cases, 334 deaths in the previous year, 9,931 cases 356 deaths in 1900, and 8,205 cases 351 deaths in 1899. The County rate corresponds to 0·20 per 1,000 of the population, in urban districts 0·20, and in rural districts 0·19; the rate for England and Wales was 0·15, and for 76 great English towns 0·19; the County average for the 10 years 1892-1901 was 0·21. The percentage of deaths to cases notified was 4·0, as compared with 3·8 in the previous year, 3·5 in 1900, and an average of 5·2 for the 10 years 1892-1901. The prevalence was marked in the following districts, viz.:—

	Cases.	Deaths.	Removals to Hospital.
Accrington (B.)	115	4	0
Ashton-under-Lyne (B.)	207	14	7
Aspull	121	6	0
Atherton	159	5	63
Blackpool (B.)	197	5	184
Chorley (B.)	156	8	138
Colne (B.).....	127	4	0
Darwen (B.)	137	9	26
Eccles (B.)	191	11	99
Farnworth.....	208	10	184
Fleetwood.....	187	10	5
Horwich	157	5	0
Ince-in-Makerfield	178	9	36
Lancaster (B.)	173	2	110
Leigh (B.).....	198	10	97
Nelson (B.)	269	12	0
Swinton and Pendlebury.....	373	25	84
Tyldesley-with-Shakerley.....	180	4	83
Westhoughton	277	12	0
Chorley (R.)	175	7	39

Of the precautionary measures available for controlling scarlet fever hospital isolation is undoubtedly the most important. It is, therefore, unsatisfactory to observe that of the total cases notified only 25·92 received hospital isolation; in the previous year the percentage was 23·54. The removals to hospital varied from 93·4 per cent. in Blackpool (B.), and 88·4 per cent. in Farnworth, to 6 per cent. in Burnley (R.), 2·6 per cent. in Fleetwood, and none from Aspull, although claiming to have use of the Wigan Sanatorium. The absence of hospital accommodation in the following large districts cannot be regarded as creditable to the Authorities, viz.:—Accrington (B.), Bacup (B.), Colne (B.), Denton, Nelson (B.), and Standish-with-Langtree. In a few districts like Horwich and Westhoughton the provision of hospital accommodation is

receiving attention. Of all the County districts Swinton and Pendlebury was most attacked by scarlet fever, and in face of 373 cases and 25 deaths the Council decided with great puerility "to insist on the isolation of patients being carried out in their own homes wherever possible, and after instructions have been given for this to be done that each infected house be kept under supervision by regular visitation by the Inspector even though it entail additional assistance to carry it out." Well may the Medical Officer of Health report that "however desirous the parents may be of keeping healthy children from contact with the infected persons, it is certain this object cannot be attained in a four or five roomed cottage so well as in the wards of a hospital where trained nursing, regular supervision, and what is of more importance, complete and adequate isolation may always be expected." Another anomalous position taken up by the Council is to object to carry out a recommendation as to school closure, deeming it sufficient to exclude scholars from infected houses.

The following are some of the references to scarlet fever contained in the reports of Medical Officers of Health :—

ALLERTON. Some of the attacks were due to infection obtained from an unrecognised case attending school.

BLACKPOOL (B.). Several cases were not discovered until after the desquamating stage was reached. In one instance a child had been ill a fortnight and attending school; 16 other cases were attributable to this oversight. A prosecution was instituted under Section 126 of "The Public Health Act, 1875," for exposing infected clothing; to avoid having the articles disinfected they were sent away from the house where scarlet fever had existed.

ECCLES (B.) Several cases were so mild that they were not recognised until the stage of desquamation was reached, and these, no doubt, contributed to the spread of the disease. In one instance legal proceedings were successfully instituted for gross carelessness on the part of the parents in not notifying the occurrence of scarlet fever.

FLEETWOOD. Spread of the disease attributed to the fact that patients exposed themselves in the streets and other public places before they were free from infection.

INCE-IN-MAKERFIELD. In connection with scarlet fever four inspections of the schools were made, and each time one or two children were found in the peeling stage.

MOSS SIDE. Imperfect isolation contributed largely to the spread of scarlet fever, the mildness of type rendering its early detection extremely difficult in many instances.

TYLDESLEY-WITH-SHAKERLEY. A special inspection of the schools and scholars took place in December, and at one school the Medical Officer of Health found several children desquamating; it need hardly be stated that a large number of cases occurred amongst the children attending that school. Three prosecutions followed against parents for sending their children to school whilst suffering from infectious disease, and in each case a fine of 10s. and costs was inflicted. The schools were all closed.

UPHOLLAND. In dealing with scarlet fever isolation at home was practised, but in cottages the attempt at complete separation proved abortive, and there was an inveterate tendency to allow children imperfectly cured to go to school or play about with companions.

WITHINGTON. The two chief influences at work tending to spread the disease were (1) unrecognised cases, (2) patients discharged from hospital who were capable of imparting scarlet fever to others after their return home. In the first category an instance is given of a boy who was only diagnosed to be suffering from scarlet fever after a month's illness; to this case 6 others were attributable. As regards "return cases," several instances are reported where cases occurred in houses within a short time of the return of patients from hospital.

FYLDE (R.) The prevalence in Wesham was undoubtedly increased by cases not being notified at the beginning of the

epidemic ; the cases being mild in character no medical attention was drawn to them.

LEIGH (R.) One cause of the spread of scarlet fever was a mild and unrecognised case, and another was the general indifference of some of the people to isolate their cases sufficiently in their own homes. A prosecution or two for not taking the necessary precautions would, no doubt, have a salutary effect.

The annual reports show that closure of schools in 28 districts took place in consequence of scarlet fever.

The monthly incidence of cases and deaths in the districts which make periodical returns was as follows :—

1st Quarter.			2nd Quarter.			3rd Quarter.			4th Quarter.		
	Cases.	Deaths.		Cases.	Deaths.		Cases.	Deaths.		Cases.	Deaths.
Jan.	772	25	April	659	28	July	555	19	Oct.	770	32
Feb.	780	29	May	648	25	Aug.	592	25	Nov.	833	32
Mar.	794	34	June	517	13	Sep.	704	21	Dec.	907	32
	2346	88		1824	66		1851	65		2510	96

Table, page xxi., shows the annual rates of mortality from scarlet fever for 10 years—1892-1901—compared with 1902.

Whooping Cough.—There was a satisfactory diminution of deaths from this cause, the total being 351 (urban 296 and rural 55), as compared with 378 deaths last year, and 727 in 1900. The death-rate corresponded to 0·19—urban 0·18, rural 0·23—against 0·20 for the County in 1901—urban 0·21 and rural 0·13. The County average for the 10 years 1892-1901 was 0·30, and the rate for the year under review is the lowest recorded excepting 1898, when it was exactly the same. In the districts supplying returns, the first quarter, with 60 deaths, was least fatal, then the 4th quarter with 82

deaths, and most fatal in the second and third quarters, with 98 and 87 deaths respectively. The fatalities from the disease were highest in the following districts—Accrington (B.) 16, Ashton-under-Lyne (B.) 13, Eccles (B.) 24, Gorton 10, Hindley 13, Ince-in-Makerfield 12, Nelson (B.) 13, Ulverston 10, Ulverston (R.) 12, and West Lancashire (R.) 12. Schools were closed on account of the prevalence of whooping cough in five districts, viz. :—Accrington (B.), Chadderton, Walton-le-Dale, Preston (R.), and Ulverston (R.). In Southport (B.) the disease was made notifiable on the 8th of May, 1902.

Diphtheria and Membranous Croup have shown a diminished prevalence. Of the total cases (2,833) notified 563 proved fatal, while in the previous year there were 3,242 cases and 636 deaths. The County rate was equal to 0·30 per 1,000, being 0·30 in urban and 0·29 in the rural districts. In 1901 the County rate averaged 0·34 : in the urban districts 0·35, and 0·29 in the rural. The County average for the 10 years 1892-1901 was 0·14, but prior to 1899 membranous croup was dealt with under a separate heading. On reference to Table V. it will be seen that the largest proportion of cases occurred in the first quarter, then the last, and least in the third quarter—same as last year. The cases and deaths were most numerous in—

	Cases.	Deaths.	Removals to Hospital.
Adlington	130	10	10
Ashton-in-Makerfield	45	8	9
Blackpool (B.)	75	18	3
Chadderton	44	16	0
Darwen (B.)	144	21	1
Eccles (B.)	108	21	73
Hindley	95	9	0
Lancaster (B.)	95	16	0
Stretford	76	16	38
Swinton and Pendlebury ...	225	35	45
Ulverston	111	13	16
Barton-on-Irwell (R.)	80	10	24

In 32 districts there was not a single death recorded either from diphtheria or membranous croup. Of the measures taken to prevent the spread of these allied diseases schools were closed in the following eight districts:— Adlington, Barrowford, Darwen (B.), Eccles (B.), Haslingden (B.), Swinton and Pendlebury, Ulverston, and Barton-upon-Irwell (R.). Hospital isolation was carried out only to a limited extent, and more attention might have been paid to the bacteriological examination of the throat secretions and nasal discharges of children attending schools in which diphtheria appeared.

The following are some of the more important references contained in the reports of Medical Officers of Health in respect of this disease:—

ADLINGTON. In the first quarter of the year diphtheria gave rise to 103 attacks, of which 6 ended fatally. As a result of exhaustive inquiries, the source of infection pointed so strongly to the National School that it was closed by the Local Authority. On examination of the school drains serious defects were discovered quite close to the class-room for children, and the smoke test showed that communication with the space under the class-room floor had been made by rats, the floor of this space or basement being formed of ordinary earth. These conditions were at once remedied.

There is reason to believe that many adults went about with mild sore throats unaware that they were capable of spreading diphtheria infection among their co-workers. Such cases are most dangerous, and during the prevalence of diphtheria throats in any way suspicious should be submitted to bacteriological examination in view of precautionary measures.

AUDENSHAW. The increase in the number of diphtheria cases is believed to be due to the disturbance of old drains and sewers, rendered necessary in the carrying out of the new sewerage system.

BLACKPOOL (B.). Seventy-six specimens taken from the throats of suspected cases were sent for bacteriological examination, and the diphtheria bacilli were found in 28. The facilities granted by the Council for the free supply of anti-toxin have been taken advantage of to a considerable extent.

HASLINGDEN (B.). The school in Acre Ward, closed in consequence of the prevalence of diphtheria, was found to be very unsatisfactory as regards drainage. In the absence of an isolation hospital very little can be done to curtail the disease.

HORWICH. Dampness of houses and surroundings, and want of means of isolation accounted to some extent for the prevalence of the disease.

LANCASTER (B.). It is satisfactory to observe that diphtheria, although prevalent, was less fatal than in the previous two years. The Medical Officer of Health was unable to discover any special cause for the continuance of the disease, which, he reports, is "in all probability due to climatic conditions favourable to the diphtheria bacilli, which has found a suitable nidus."

LITTLE HULTON. Most of the attacks took place in the Worsley Road district, where, in many instances, the house drains were found defective and the closets in foul condition.

MOSSLEY (B.). It is interesting to note that diphtheria antitoxin serum is supplied at the expense of the Corporation to all medical men.

OSWALDTWISTLE. "Many cases were the result of damp scullery and kitchen walls, caused by defective slop pipes and gullies which allow the slops to percolate into the surrounding earth."

ULVERSTON. From September to the end of the year diphtheria was very prevalent, and spread from a farmhouse in which a patient suffering from the disease was being treated. It was found that a large proportion of the sufferers obtained either the whole or some part of their milk from the farm, and a bacteriological examination of a sample revealed

the bacillus. How the bacillus gained admittance to the milk is difficult to say; the cows appeared perfectly healthy, and care had been taken to isolate the patient. The milk supply from the farm was stopped. The disease, having once become fairly established, no doubt, also spread through school attendance, and closure undoubtedly had a marked effect in checking the spread of the infection.

Fever.—In the official form now issued by the Local Government Board to Medical Officers of Health “fever” is divided into “typhus,” “enteric,” and “other continued.”

Typhus fever was the cause of 10 cases and 3 deaths. Of the fatal cases, one—virulent in type—occurred in Litherland, and was removed to hospital (Bootle); the ambulance attendant unfortunately became infected and also died. Another death took place at Rishton, but there is reason to believe that the patient contracted the disease in the West of Ireland, where he had been visiting. The other typhus cases were either doubtful or of a modified character.

Enteric fever (also known as typhoid) gave rise to 1,747 cases, 297 deaths, and continued fever 63 cases, 9 deaths.

The total “fever” deaths amounted to 309, against 369 in the previous year, and 409 in 1900. The death-rate per 1,000 of the population was 0·16—urban 0·16, rural 0·15—as compared with a County rate equal to 0·20 in 1901, and 0·22 the mean of the 10 years 1892-1901. The “fever” rate for the whole of England and Wales averaged 0·13, and 76 great English towns 0·15 per 1,000.

There were 1,820 fever cases notified, against 2,155 in the previous year, 2,285 in 1900, 2,773 in 1889, and 2,661 in 1898. The case mortality, or proportion of deaths to cases, was equal to 16·9 per cent., against 17·1 last year, 17·8 in 1900, and an average of 18·0 for the 10 years 1892-1901. The

monthly incidence of cases and deaths in the districts making monthly returns was as follows :—

1st Quarter.			2nd Quarter.			3rd Quarter.			4th Quarter.		
	Cases.	Deaths.		Cases.	Deaths.		Cases.	Deaths.		Cases.	Deaths.
Jan.	145	29	April	133	25	July	126	14	Oct.	202	33
Feb.	97	14	May	101	14	Aug.	124	23	Nov.	154	28
Mar.	131	18	June	84	12	Sep.	189	30	Dec.	129	19
	373	61		318	51		439	67		485	80

In 42 districts no deaths took place from fever, but the prevalence was marked in Accrington (B.) 35 cases 6 deaths, Ashton-in-Makerfield 36 cases 5 deaths, Ashton-under-Lyne (B.) 59 cases 7 deaths, Atherton 42 cases 11 deaths, Blackpool (B.) 70 cases 13 deaths, Darwen (B.), 35 cases 8 deaths, Hindley 32 cases 12 deaths, Lancaster (B.) 61 cases 7 deaths, Leigh (B.) 49 cases 13 deaths, Pemberton 82 cases 3 deaths, Radcliffe 47 cases 7 deaths, Swinton and Pendlebury 37 cases 12 deaths, and Widnes (B.) 46 cases 15 deaths.

The following district references are of interest :—

ASHTON-IN-MAKERFIELD. One case of typhoid fever (Garswood) was very probably caused by impure drinking water. The Sanitary Inspector, in referring to this case, reported that “the domestic water supply is obtained from field drains, and sewage from new sewer in the field has been getting into it.”

ATHERTON. It is interesting to note that 31, or 73·8 per cent. of the total typhoid fever cases occurred in houses provided with privy middens, and 11, or 26·2 per cent. in houses with water closets

FARNWORTH. A diminished typhoid death-rate is attributed to the improved condition of backyards, and the abolition of many privy middens.

HASLINGDEN (B.). In one house in Town Ward a family of 7 persons was attacked; the disease evidently started in consequence of sewage-polluted soil being distributed whilst putting in new sewers at the back of the property, and the subsequent cases were, in all probability, the result of personal contact.

PEMBERTON. An epidemic of typhoid fever occurred in the latter half of the year. From a special Report prepared in November it appears that in many of the houses attacked insanitary conditions existed, such as defective drainage, unpaved yards, percolation of liquid from privy middens, and in some instances overcrowding. Suspicion also attached itself to milk obtained from a certain farm which supplied the majority of the houses attacked. The cattle at this farm had free access to a brook on the banks of which was stored ash-pit refuse, part of which had been washed by storms into the brook.

RAINFORD. One of the operative causes in the production of this disease, is the objectionable privy midden often in too close proximity to dwellings.

RAWTENSTALL (B.). Eleven cases of typhoid fever were traceable to a milk supply which had been contaminated, and 10 others were infected from these cases.

ST. ANNES-ON-THE-SEA. One of the typhoid fever cases occurred in a house where the conversion of the privy midden into a water closet was taking place, and there is little doubt that the disturbance of the sewage-sodden soil was the source of the disease.

SKELMERSDALE. In two of the typhoid fever cases the disease was due to drinking water from a polluted well, whilst another case was attributed to a defective drain.

TOTTINGTON. One of the typhoid fever cases was very probably caused by the offensive condition of the privy midden.

WALTON-LE-DALE. One of the attacks—at a farmhouse—was due to drinking contaminated water. The slop water ran

into a small tank, the overflow water simply soaking into the ground only a short distance away from the well supplying drinking water. Dr. Trimble at once suspected the water, and the analysis thereof showed it to be "highly polluted and quite unsuitable for drinking and domestic purposes."

In reference to the connection between enteric fever and a filth-polluted soil, Sir R. Thorne Thorne says that "the privy-midden, which still prevails in so many of our large towns, presents every feature that should be studiously avoided. Generally sunk below the ground, often open to rainfall, always storing up in close proximity to dwellings decomposing excreta and refuse, it provides almost every condition favourable to the production of nuisance, to the saturation of the ground with filth, and to the setting up and maintenance of those very conditions which seem to be essential to the vitality and multiplication of the typhoid bacillus." The filth-sodden soil so frequently found in the small urban districts of this County forms a suitable nidus for the growth of the bacillus typhosus and accounts for the endemic appearance of typhoid fever, especially in the autumn, when the temperature and environment are most favourable for the propagation and development of the specific organism.

During the last few years a large amount of evidence has accumulated showing how shell-fish may act as distributors of the enteric fever contagium to those who consume them. This dangerous property is inherent to those bivalves obtained from sewage polluted estuaries, or from any portion of foreshore subject to sewage pollution. Oysters being principally consumed in a raw condition, seem to be more liable to convey the contagium of enteric fever than cockles or mussels, which are usually consumed in a cooked state. In one case of enteric fever which occurred at Huyton-with-Roby, it is supposed that the infection was conveyed by oysters, and in another enteric case reported on by the Medical Officer of Health of Lytham the cause of infection was attributed to the consumption of

uncooked mussels. Dr. Coutts, Medical Officer of Health for Blackpool (B.), is of opinion that in 25 cases of typhoid fever there was a definite history of shell-fish consumption before the supposed date of onset. He states that "owing to the almost universal method of sewage disposal, in vogue at our seaside towns, by turning crude sewage into the sea, it is certain that every opportunity is allowed for the pollution of shell-fish. If the specific organism of enteric fever happens to be present in the sewage, the shell-fish may become a serious source of danger, but even without that, sewage microbes are probably responsible for some of the attacks of violent diarrhœa experienced after eating mussels or cockles. One case comes as near being a positive proof of typhoid fever from shell-fish as we are at all likely to get. The patient, a policeman, nine days before the onset of the disease, got some mussels from a man who had been seen to pick them from the sewer outfall pipe. He and a fellow-constable ate these mussels. His comrade had severe vomiting and purging, which possibly saved him from typhoid fever, but the patient in question had a very severe attack, his blood giving a typical Widal reaction."

In view of some of the shell-fish beds on the coast line of this County being possibly subject to contamination by sewage, my attention has been specially directed to this matter, and, with the assistance of Mr. Dawson, Superintendent of Lancashire, &c., Sea Fisheries, valuable information has been obtained, which will be laid before you in a future report.

Diarrhœa.—According to the forms now issued by the Local Government Board, under the heading diarrhœa, are to be included deaths certified as from diarrhœa alone, or a combination with some other cause of ill-defined nature and also deaths certified as from—

Epidemic enteritis, Zymotic enteritis,
 Epidemic diarrhœa—summer diarrhœa,
 Choleraic diarrhœa, cholera, cholera nostras (in the
 absence of Asiatic cholera).

Under the heading of enteritis are to be included those certified as from gastro-enteritis, muco-enteritis, and gastric catarrh, unless from information obtained by inquiry from the certifying practitioner or otherwise the Medical Officer of Health should have reason for including such deaths, especially those of infants under the specific term diarrhœa.

Deaths from diarrhœa, secondary to some other well-defined disease, should be included under the latter.

The total deaths embraced under the head of diarrhœa amounted to 519, against 1,752 in the previous year, and 1,187 in 1901. The County rate, equal to 0·28 (urban 0·30, rural 0·14), was much below any previously recorded diarrhœa rate, and showed a reduction of 0·67 as compared with the previous year. The whole of England and Wales gave a rate of 0·38, and 76 great English towns 0·54 (see Table below). The County average for the 10 years—1892-1901—was 0·77, or 0·49 above the year under review.

	1902	1901	1900	1899	1898	1897	1896	1895
Administrative County	0·28	0·95	0·60	1·05	1·00	0·77	0·48	0·95
Urban Districts	0·30	1·01	0·65	1·12	1·06	0·80	0·52	1·04
Rural Districts	0·14	0·52	0·27	0·53	0·55	0·56	0·28	0·44
England and Wales....	0·38	0·91	0·69	0·98	0·96	0·86	0·55	0·88
*76 Large English Towns	0·54	1·23	0·94	1·21	1·22	1·24	0·79	1·19

*The rates for 1895-1901 refer to 33 Towns.

Under the head of enteritis 653 deaths were registered against 896 in the previous year, and there is reason to believe that in relation to this disease, and epidemic or zymotic enteritis, there exists a want of uniformity as to death certification. In order, therefore, to secure reliable and comparable statistics, medical practitioners are requested to use

the term "epidemic enteritis" (or, if preferred, zymotic enteritis) as a synonym for epidemic diarrhœa, and to discontinue as synonyms of epidemic diarrhœa in medical certificates of death such terms as "gastro-enteritis," "muco-enteritis," "gastric catarrh," &c. Table V. shows the monthly incidence of deaths in the total districts supplying returns.

The greatest diarrhœa mortality took place during September (159) and October (120); this differs from the average of preceding years, when the diarrhœa invasion commenced in July. The most striking variation was observed in the month of August, when only 54 diarrhœa deaths were registered as compared with 730 in the corresponding month of the previous year.

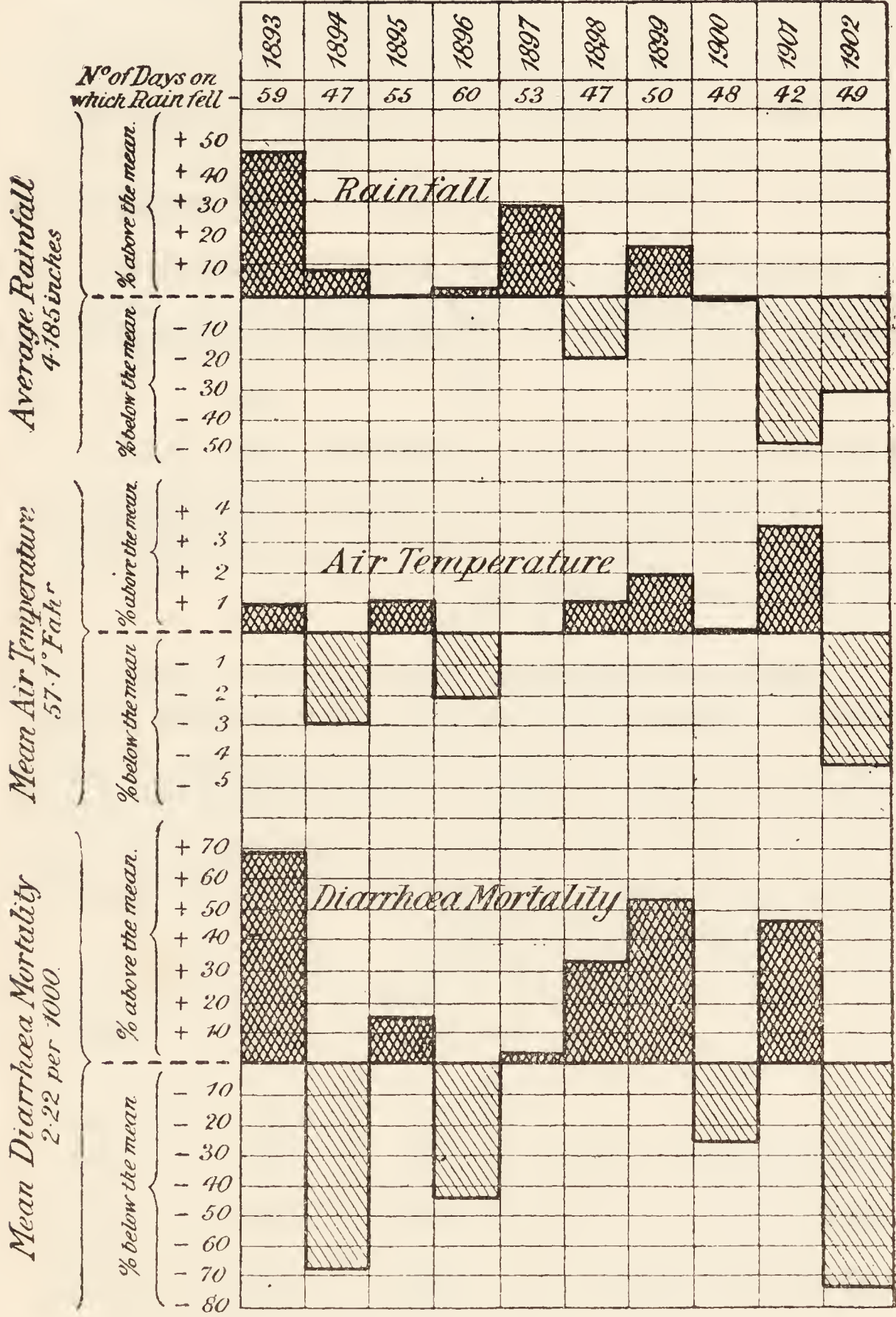
The highest diarrhœa rates were recorded in Prescott 1·78, Pemberton 1·54, Aspull 1·43, Little Hulton 1·23, Ince-in-Makerfield 0·92, Haydock 0·91, Ashton-in-Makerfield 0·88, Atherton 0·80, Little Lever 0·77, Gorton 0·72, Farnworth 0·69, and Failsworth 0·63.

In Ashton-under-Lyne (B.) the dépôt, established in May, 1901, for the supply of modified and sterilised milk, is doing highly satisfactory work; during the year under report 82,125 bottles of modified, *i.e.*, humanised, and 31,780 pint bottles of sterilised milk were supplied, and the sale of both is on the increase.

The Medical Officer of Blackpool (B.) says:—Owing to the cold summer the four-foot thermometer was only at 56° F. for about eight weeks in the year, and consequently there were few diarrhœa deaths. The extremely small mortality from zymotic enteritis is also attributed to the same cause.

In other reports, for instance, Church, Gorton, Radcliffe, Rawtenstall (B.), &c., there are references to the effect of the cool and wet weather experienced in the summer on the reduction of diarrhœa deaths. As mentioned under the head of infantile mortality, the advent of heat means the production of conditions inimical to infant life, especially when associated with a deficiency in the rainfall.

This diagram shows the diarrhœa deaths which occurred in the Administrative County of Lancaster during the summer quarters of the 10 years 1893-1902, together with the mean temperature, rainfall, and number of wet days (Stonyhurst):—



Epidemic Influenza was the cause of 226 deaths, the lowest number recorded since 1896, with 140 deaths. In 1897 there were 337 deaths, 268 in 1898, 489 in 1899, 801 in 1900, and 231 in 1901. The monthly return of deaths is given below :—

1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.
January..... 25	April..... 21	July 10	October..... 16
February ... 24	May..... 24	August..... 10	November . 16
March 9	June..... 27	September. 6	December.. 38
58	72	26	70

The deaths exceeded the average in Accrington (B.) 14, Withington 11, Radcliffe 9, and 7 in each of the districts of Chadderton and Ulverston (R.).

Respiratory Diseases, comprising as in previous years bronchitis, pneumonia, and pleurisy, were responsible for 5,469 deaths, or 19·4 per cent. of the County mortality. In 1901, 5,307 deaths, equal to 17·8 per cent.; in 1900, 6,727, or 19·9 per cent.; and in 1899, 6,563, or 19·3 per cent. of the total deaths were recorded. The respiratory death-rates per 1,000 of the population are given below :—

	1902.	1901.	1900.
Urban Districts	3·04	2·98	3·53
Rural Districts	2·44	2·32	2·72
Administrative County.....	2·90	2·90	3·43

The County average for the ten years 1892-1901 was 3·49 per 1,000. The rate for the year under report was lowest ever recorded, excepting last year, when it was exactly the same.

The highest respiratory rates were obtained in Ince-in-Makerfield 8·03, Ormskirk 5·39, Swinton and Pendlebury 4·96, Abram 4·83, Upholland 4·81, Aspull 4·76, Leigh (B.) 4·48, Lees 4·41, Ashton-in-Makerfield 4·39, Chorley (B.) 4·25, West-houghton 4·22, Middleton (B.) 4·21, Skelmersdale 4·16, and Droylsden 4·01.

Heart disease contributed 2,299 deaths, or 37 less than in the previous year. The rate per 1,000 corresponded to 1·24, or 0·01 below the mean (1·25) of the 10 years 1891-1900.

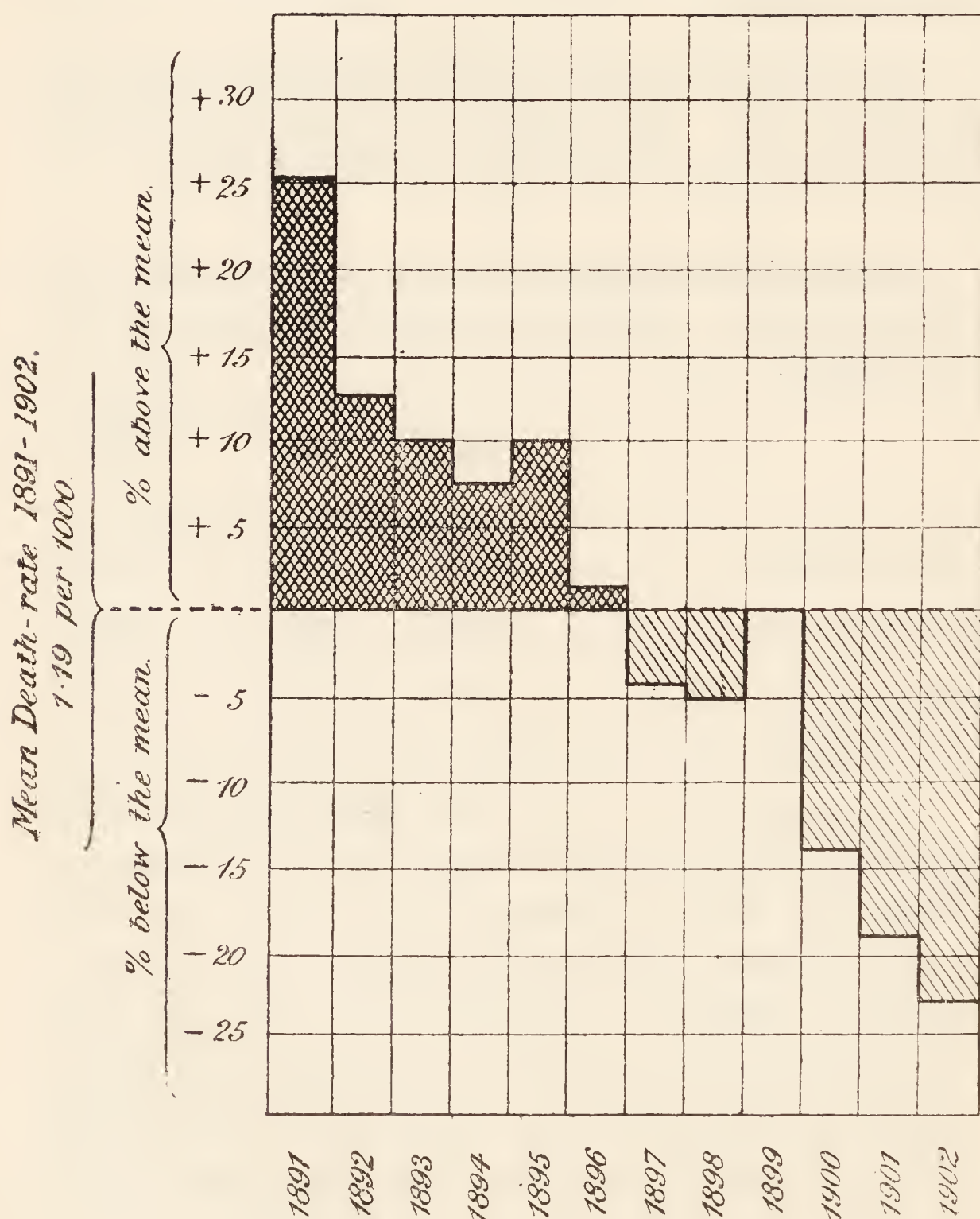
Tuberculous Phthisis accounted for 1,701 deaths, or 84 less than in 1901. The death-rates per 1,000 of the population are as follow :—

	1901.	1900.	1899.
Urban Districts	0·94	1·00	1·06
Rural Districts	0·78	0·79	0·84
Administrative County ...	0·92	0·97	1·03

It is satisfactory to observe that there is again a further reduction in this preventible disease, and it is reasonable to assume that the improvement may be mainly attributed to the increased attention paid during recent years to sanitation as applied to the housing and home life of the people and the better conditions surrounding the workers in the factories and workshops. For the 10 years 1892-1901 the phthisis rate averaged 1·19 per 1,000, while the rate for the year under report was 0·92, or 0·27 below the mean, equal to an annual saving in the whole County of 489 lives.

In the following districts the phthisis rates were high, viz.:—Little Woolton 1·83, Limehurst (R.) 1·83, Hurst 1·81, Longridge 1·62, Littleborough 1·59, Accrington (B.) 1·58, Ashton-under-Lyne (B.) 1·57, Atherton 1·54, and Heywood (B.) 1·50.

The Diagram below shows the annual County deaths from tuberculous phthisis from 1891-1902 in relation to the mean of that period.



The deaths from other tubercular diseases, including tuberculous meningitis, tuberculous peritonitis, tabes mesenterica, general tuberculosis, and tuberculous disease of other parts of the body amounted to 794, which, together with tuberculous phthisis, gave rise to 2,495 deaths, equivalent to a rate of 1·35 per 1,000 of the population, or 0·15 less than the rate (1·50) in 1901.

An increasing number of districts have adopted the voluntary notification of phthisis: for instance, Accrington (B.), Birkdale, Eccles (B.), Leigh (B.), Levenshulme, Little Hulton, Little Lever, Moss Side, Much Woolton, Newton-in-Makerfield, Southport (B.), Stretford, Tottington, Ulverston, Waterloo-with-Seaforth, and Garstang (R.). Disinfection is more extensively carried out after phthisis than formerly, and attention is paid to other precautionary measures. With a view to minimising as far as possible the occurrence of phthisis, a densely populated district should be avoided, and the home should be ample for the number of residents. The phthisis death-rate bears an intimate relationship to overcrowding, and follows closely groups of houses in the order of their habitability and number of occupants. It must also be remembered that associated with overcrowding there is usually found indigence, dirt, absence of fresh air and sunlight, and all those conditions which are likely to assist in the causation and extension of tuberculosis. Periodical inspection of factories and workrooms must be adequately carried out in order to prevent overcrowding, and secure proper and sufficient ventilation. Local authorities should also improve dwelling-houses and relentlessly clear away unhealthy areas imperfectly provided with air and sunshine.

When tuberculosis breaks out in a household the patient becomes a danger so long as he remains, and the further the disease advances, whether in extent or degree, the greater this danger becomes. The aim of the sanitarian ought to be to provide for the cure of the patient as well as to remove the source

of danger from among the susceptible. The sanatorium isolates the patient whilst cure is often successfully attained. In addition to being curative and prophylactic sanatoria are educational, where the patients are taught how to live so as to secure health and preserve it. The value of this teaching is important to the community, and it has been said that "each inmate is sent forth as a missionary to disseminate his knowledge to his family and friends." At the British Congress on Tuberculosis, held in London, in 1901, it was unanimously resolved—"That the provision of sanatoria is an indispensable part of the measures necessary for the diminution of tuberculosis," and it is satisfactory to know that many large governing bodies in various parts of the country are now being provided with suitable accommodation. This work should, in my opinion, be carried out in Administrative Counties by County Councils, and it is hoped that Lancashire will before long be provided with a sanatorium, for such an institution is much needed by many who now lie stricken with tuberculous disease, and are too poor to pay for treatment in existing establishments. Further, the number of deaths from tuberculous phthisis which take place annually in the Administrative County may be estimated at 2,000, and assuming that an average period of three years elapses from the reception of infection and death, there is reason to believe that at present the persons affected with this disease amount to three times the number of deaths, say 6,000. So much suffering and death is in a large measure preventible, and it is for the County Council to say whether it shall be prevented.

Infectious Disease Notification.—The total notifications amounted to 19,214, as compared with 16,724 in the previous year, or an increase of 2,490. The chief increase was in measles 1,902, small-pox 430, scarlet fever 386, but diphtheria and typhoid fever showed a decline of 345 and 347 respectively. Particulars of cases notified, as compared with 1901, are given in the following Table:—

Diseases.	1902.			1901.		
	Urban Sanitary District.	Rural Sanitary District.	Total.	Urban Sanitary District.	Rural Sanitary District.	Total.
Small-pox.....	416	20	436	5	1	6
Scarlet Fever ...	8070	1083	9153	7916	851	8767
Diphtheria	35 58	296	2654	2564	435	2999
Croup	160	19	179	218	25	243
Typhus Fever ...	9	1	10	...	...	...
Typhoid Fever...	1547	200	1747	1924	170	2094
Continued Fever.	61	2	63	60	1	61
Puerperal Fever.	138	18	156	135	19	154
Erysipelas	1263	140	1403	1170	149	1319
Measles	2279	697	2976	1052	22	1074
Whooping Cough	138	60	198	...	...	...
Chicken Pox.....	231	...	231	...	...	...
Rötheln	5	...	5	5	...	5
Relapsing Fever.	2	1	3	2	...	2
English Cholera..	...	...	...	...	...	...
Diarrhæa .....	...	...	...	...	...	...
Not classified ...	...	...	...	...	...	...
Total	16677	2537	19214	15051	1673	16724

Measles is reported as notifiable in five districts, viz:—Blackpool (B.), Southport (B.) (from May, 1902), Standish-with-Langtree, Thornton, and Lunesdale (R.). It ceased to be notifiable in Droylsden and Stretford during the month of June. The Medical Officer of Health of the former district reported that, owing to the benefit derived from notification of measles being so limited, he did not advise the Council to renew the Order, and therefore notification ceased. Dr. Heslop (Stretford) states that for a period of years the notification of measles has entailed a large amount of labour on sanitary officials and considerable expense, without any adequate return, consequently the Council ceased to require the disease to be notified. In only one district, Southport (B.), is whooping cough notifiable.

Chicken-pox had a somewhat extensive prevalence, and

was the cause of 231 attacks, against nil in the previous year. Owing to the eruption of this disease so closely resembling that of discrete small-pox the two diseases are occasionally confounded, and it is important that both should be notified. Chicken-pox was added to the notifiable list for specified periods varying from 3 to 12 months in the following seven districts :— Birkdale, Chadderton, Eccles (B.), Haydock, Lancaster (B.), Levenshulme, and Southport (B.), and the Medical Officers of Stretford and Lunesdale (R.) recommend a similar course.

Isolation Hospitals.—A great advance has been made during the year towards providing hospital accommodation, and the fear of small-pox has induced several districts to make temporary provision, or arrange with neighbouring authorities for the hospital isolation of this disease in case of invasion. The table below shows that only 9 districts with a population of 47,599 now remain wholly unprovided with some provision for isolating cases of infectious disease, while 10 years ago the population unprovided in this respect amounted to 370,830.

	Boroughs.	Urban Sanitary Districts.	Rural Sanitary Districts.	Total.	Estimated Population.	Acreage (per Census Return)
Districts with Hospitals	9	31	9	49	845525	579226
Districts with Small-pox Hospitals only... ..	5	16	4	25	353168	217906
Districts with Hospital Schemes in progress	3	12	1	16	197743	88596
Districts claiming the privilege of sending patients to Hospitals in other Districts	3	29	4	36	400639	178965
Districts without Hospital accommodation ... ..	...	8	1	9	47599	26235
Total	20	96	19	135	1844674	1090928

TABLE (A).

HOSPITAL PROVISION IN VARIOUS DISTRICTS OF THE ADMINISTRATIVE COUNTY.

(PARTICULARS TAKEN FROM THE HEALTH REPORTS FOR THE YEAR 1902.)

Districts with Hospitals.			Districts with Hospital Schemes in progress.	Districts claiming the Privilege of sending Patients to Hospitals as printed in parentheses.	Districts without Hospital Accommodation.	
				URBAN.	URBAN.	
Ashton-in-Makerfield.	|| Fleetwood.	} Joint for Infectious Diseases, and combined with Garstang and Preston Unions for Small-pox.	¶ Horwich.	} Joint hospital approaching completion.	Allerton (Liverpool).	Carnforth.
Ashton-under-Lyne B.	Kirkham.		¶ Westhoughton.		* Aspull (Wigan).	Church.
Birkdale.	Lytham.		Blackrod.	Audenshaw (Hyde).	Grange.	
§ Blackpool B.	St. Annes-on-		Littleborough.	* † Bacup B. (Sourhall, Todmorden).	Great Harwood.	
Darwen B.	the-Sea		Milnrow.	† Barrowford (Nelson).	Little Crosby.	
Garston	Poulton-le-		Wardle.	* Childwall (Liverpool). (No cases reported).	Orrell.	
Ince-in-Makerfield.	Fylde.		Abram.	† Clayton-le-Moors (Accrington).	Trawden.	
Lancaster B.	Thornton.		Clitheroe B.	* Croston (West Lancashire R.)	Upholland.	
Morecambe B.	Fylde R.		Clitheroe R.	Denton (Hyde).		
Lathom and	Lunesdale R.		¶ Colne B.	Droylsden (Hyde).	RURAL.	
Burscough. } Joint.	Sefton R. (Cottage).	¶ Nelson B.	Eccles B. (Salford).	Limehurst.		
Ormskirk.	Whiston R.	Heysham (Hospital approach-	Failsworth (Oldham).			
Pemberton.	(49)	ing completion).	Gorton (Stockport and Withington).			
Rainford (Cottage).	FOR SMALL-POX ONLY.	a Heaton Norris (Small-pox	Great Crosby (Bootle).			
* Skelmersdale (Cottage).		hospital in course of erection).	Haydock (St. Helens).			
Southport B.		a Swinton and	* Hurst (Ashton-under-Lyne).			
Walton-le-Dale (Cottage).	Accrington B.	Pendlebury.	Huyton-with-Roby (Whiston R.).			
Widnes B.	Billinge (Cottage).	a Worsley.	* Irlam (Salford).			
Atherton.	Chadderton.	Withnell (Hospital approach-	Kearsley (Salford).			
Golborne.	Crompton.	ing completion).	* Lees (Oldham).			
Leigh B.	Royton.		Litherland (Bootle).			
Tyldesley.	Haslingden B.		* Little Woolton (Whiston R.).			
Leigh R.	Heywood B.		Middleton B. (Rochdale).			
Farnworth.	Hindley.		Much Woolton (Whiston R.).			
Little Hulton.	Mossley B.		Newton-in-Makerfield (Warrington).			
Little Lever.	Norden.		Prescot (Whiston R.).			
Adlington.	Oswaldtwistle.		Prestwich (Salford).			
Chorley B.	Rawtenstall B.		Rishton (Blackburn).			
Leyland.	Standish-with-Langtree		Stretford (Salford).			
Chorley R.	(Cottage).		* b Turton (Bolton).			
Dalton-in-Furness.	Whitworth (Cottage).		Urmston (Salford).			
Ulverston.	Preston R.	} Joint for Small-pox in combination with Fylde Union.	Waterloo-with-Seaforth (Bootle).			
Ulverston R.	Fulwood.					
West Lancashire R.	Longridge.					
Brierfield.	Garstang R.					
Padiham.	Preesall-with-					
Burnley R.	Hackinsall.					
Levenshulme.	Radcliffe.		} Joint Scheme for ordinary Infectious Diseases in progress.			
Moss Side.	Ramsbottom.					
Withington.	Tottington.					
	Whitefield.					
	Bury R.					
	Wigan R. (Cottage).					
(25)						
		(16)				
			URBAN.			
			Allerton (Liverpool).			
			* Aspull (Wigan).			
			Audenshaw (Hyde).			
			* † Bacup B. (Sourhall, Todmorden).			
			† Barrowford (Nelson).			
			* Childwall (Liverpool). (No cases reported).			
			† Clayton-le-Moors (Accrington).			
			* Croston (West Lancashire R.)			
			Denton (Hyde).			
			Droylsden (Hyde).			
			Eccles B. (Salford).			
			Failsworth (Oldham).			
			Gorton (Stockport and Withington).			
			Great Crosby (Bootle).			
			Haydock (St. Helens).			
			* Hurst (Ashton-under-Lyne).			
			Huyton-with-Roby (Whiston R.).			
			* Irlam (Salford).			
			Kearsley (Salford).			
			* Lees (Oldham).			
			Litherland (Bootle).			
			* Little Woolton (Whiston R.).			
			Middleton B. (Rochdale).			
			Much Woolton (Whiston R.).			
			Newton-in-Makerfield (Warrington).			
			Prescot (Whiston R.).			
			Prestwich (Salford).			
			Rishton (Blackburn).			
			Stretford (Salford).			
			* b Turton (Bolton).			
			Urmston (Salford).			
			Waterloo-with-Seaforth (Bootle).			
			RURAL.			
			Barton-upon-Irwell (Salford).			
			Blackburn (Blackburn B.).			
			Lancaster (Lancaster B.).			
			Warrington (Warrington B.).			
			(36)			
				(9)		

* Privilege not taken advantage of during the year. † Reserved for small-pox only. || Port Hospital already provided. ¶ Accommodation for small-pox already provided.
 § Combined with Fylde, Preston, and Garstang for small-pox purposes. a Ordinary infectious cases sent to Salford. b Negotiations in progress with Darwen (B.) to take cases.

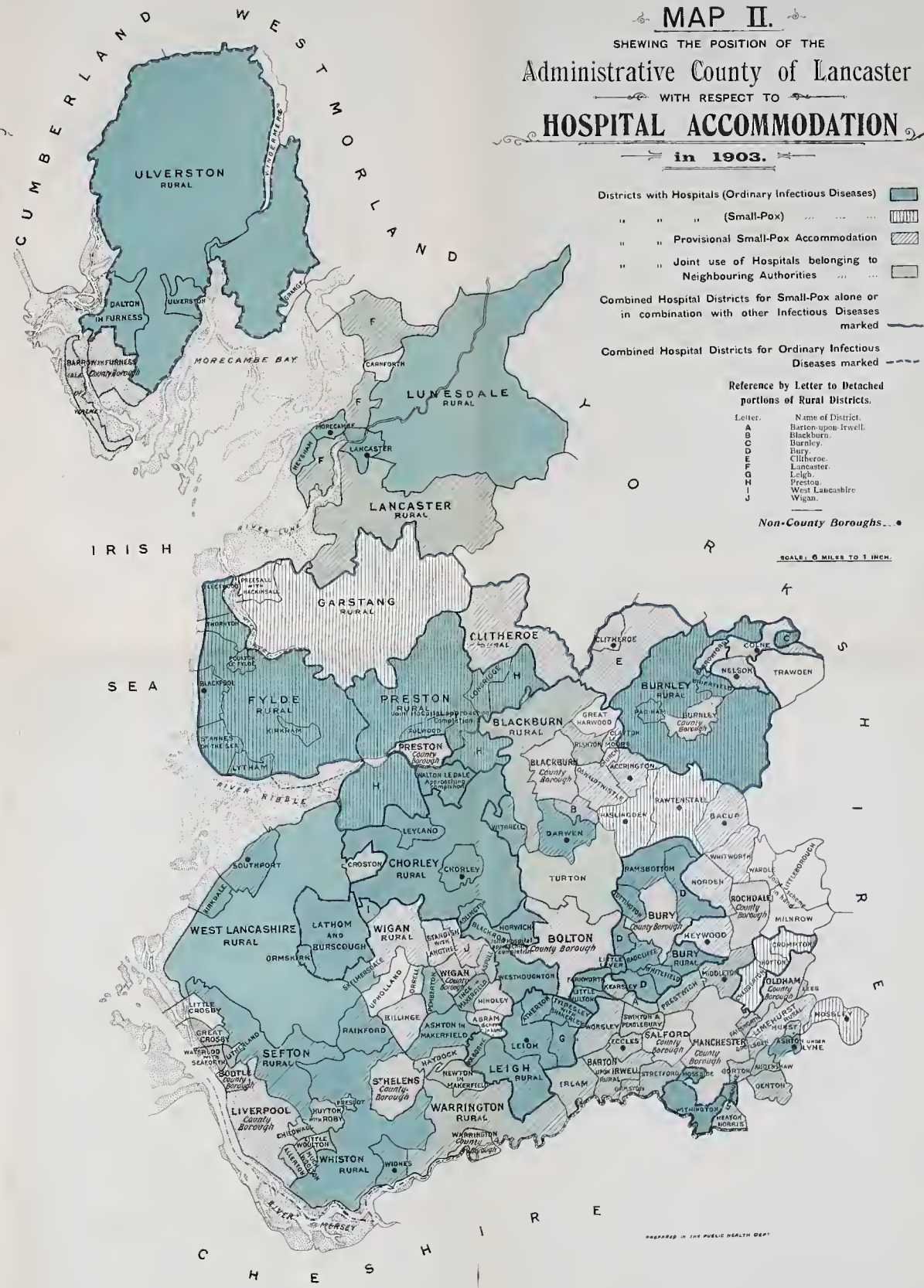
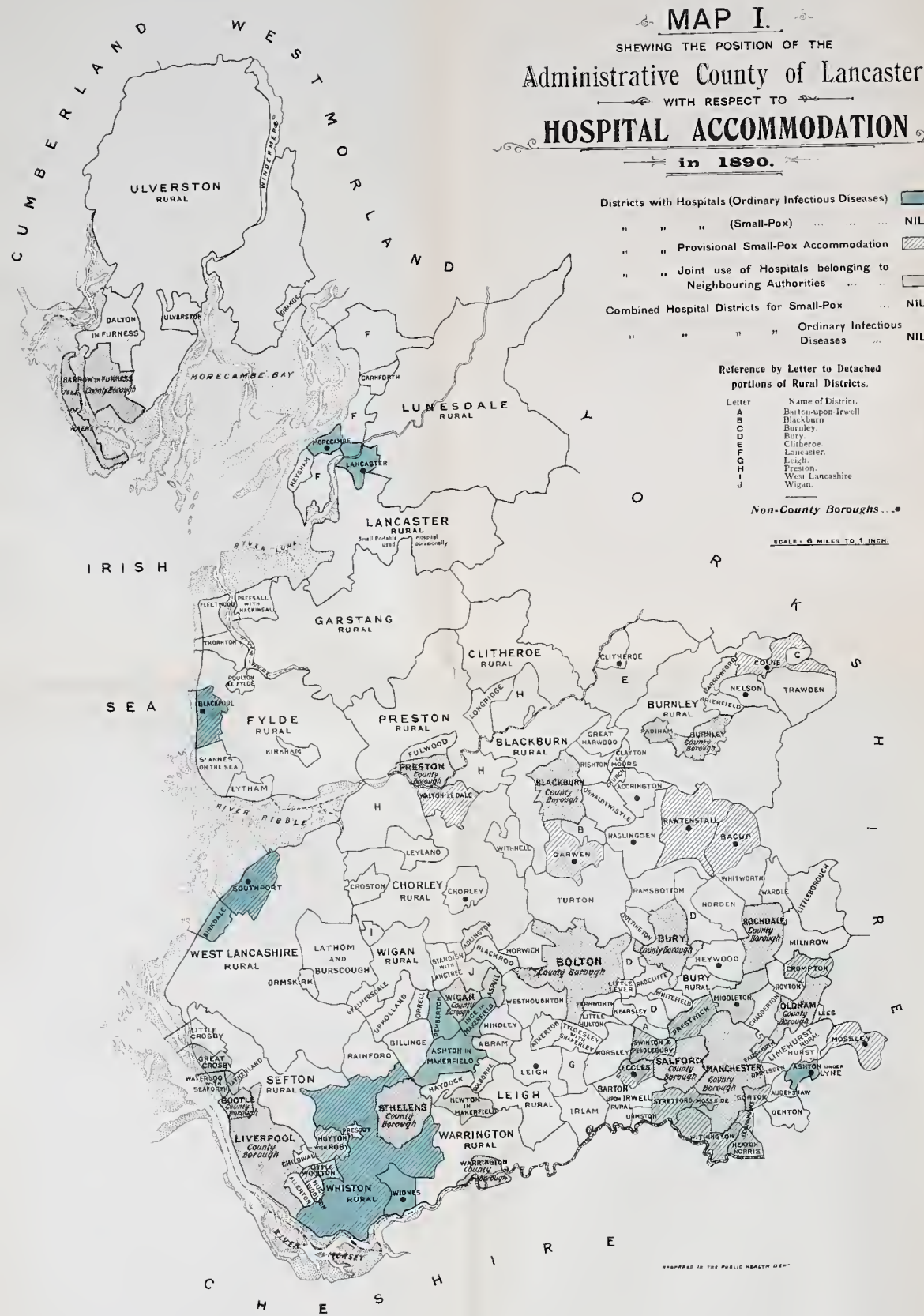


Table (A) appended shows the position of the County districts with respect to hospital accommodation, and maps Nos. 1 and 2 illustrate diagrammatically the present position of the County districts as compared with what it was 13 years ago.

The Isolation Hospitals Act came into force December 21st, 1893, and empowered County Councils to provide or cause to be provided, in districts within their administrative areas, hospitals for the reception of infectious cases. By the Isolation Hospitals Act, 1901, Local Authorities (including Joint Boards) are enabled, with the sanction of the Local Government Board, to transfer hospitals erected by them to County Councils. It also enables County Councils to make contributions to hospitals provided by Local Authorities (including Joint Boards) under the Public Health Act, 1875, and to borrow money for such purpose, and also to borrow in respect of contributions towards the erection of hospitals erected under the Isolation Hospitals Act, 1893.

The hospitals provided under Local Government Board Orders, as authorised by The Public Health Act, 1875, embrace the Chorley (B.), Adlington, Leyland, and Chorley (R.) hospital—36 beds—erected at a cost of £17,000, and opened April 27th, 1901; the Dalton-in-Furness, Ulverston, and Ulverston (R.), transferred from the Ulverston Poor Law Authority April 1st, 1899; the Withington joint hospital at Baguley, provided with 100 beds—56 scarlet fever and 36 typhoid or diphtheria—at a cost of £65,000, for the reception of 100 patients, December 10th, 1902; and the Walton-le-Dale isolation hospital for the treatment of 12 patients, now in the course of erection, at an estimated cost of £5,000. Hospitals have also been provided for Joint Authorities at Burnley, Leigh, and Farnworth (see Table A.)

Particulars of the hospitals provided under the Isolation Hospitals Act of 1893, and without any County contribution, are contained in the following Tabular Statement :—

District.	Date of Order.	Progress made towards Hospital Provision.
Chadderton Crompton Royton	Aug. 2, 1894	Small-pox accommodation for 12 patients. £5,150 borrowed from County Council. No provision for treatment of ordinary infectious diseases.
Radcliffe Ramsbottom Tottington Whitefield Bury (R.)	Aug. 5. 1897	Land secured at a cost of £4,500, and plans prepared. An application is being made to the Local Government Board for Provisional Order for uniting the County Borough of Bury with Hospital District of Radcliffe, &c., for the provision of hospital accommodation for ordinary infectious diseases and small-pox.
Preston (R.) Fulwood Longridge	Nov. 7. 1895	Hospital in course of erection, comprising scarlet fever pavilion (22 beds), observation pavilion (4 beds), administrative block, &c. Local Government Board sanction obtained to the borrowing of £15,900 for buildings.
Fleetwood Kirkham Lytham St. Annes-on-the-Sea Poulton-le-Fylde Thornton Fylde (R.)	Nov. 7. 1895	Hospital erected at Moss Side (Fylde R.); 30 beds. Opened for the reception of patients, 14th April, 1902. Money expended on buildings, &c., £17,166 11s.
Fylde } Urban & Preston } Rural Garstang } Districts	Nov. 7, 1895	Hospital in course of erection at Elswick for the isolation of 32 small-pox patients. Emergency pavilion already provided for the reception of 12 patients at a cost of £900. Sanction to borrow £18,000 for buildings.
Horwich Westhoughton Blackrod	Nov. 2, 1899	Hospital being erected to accommodate 22 scarlet fever, 12 typhoid, and 4 diphtheria patients. Sanction obtained to borrow £16,000.
Littleborough Milnrow Wardle	Feb. 1, 1900	Land secured and plans prepared for hospital, with scarlet fever pavilion (12 beds), observation pavilion (4 beds), administrative block, &c. Sanction asked for to borrow £11,500 for buildings.

In the 49 districts provided with hospital accommodation 7,426 cases of infectious disease were notified (excluding measles), and 2,420, or 32·5 per cent., received hospital isolation, as compared with 27·8 in the previous year, and 30·0 per cent. in 1900. The total number of scarlet fever cases notified in these districts amounted to 4,391, and 1,839, or 41·8 per cent., were removed, against 40·1 per cent. last year, 39·8 in 1900, 35·2 in 1899, 36·5 in 1898, and 37·6 in 1897. Of the scarlet fever patients 60 died in hospital, equal to a case mortality of 3·2 per cent., as compared with 2·9 per cent. last year, 2·6 per cent. in 1900, 5·1 per cent. in 1899, and 4·5 per cent. in 1898. The case mortality of all other scarlet fever notifications was equal to 4·2 per cent. In the 36 districts claiming the privilege of sending cases to hospitals in other districts 3,492 cases of infectious disease were notified (excluding measles), and 754, or 21·5 per cent. of removals took place, against 23·7 per cent. last year, 18·1 per cent. in 1900, 16·9 in 1899, 17·6 in 1898, and 10·6 in 1897. In 11 of these districts the privilege claimed was not taken advantage of, and in 11 others the removals varied from 1 to 9. The proportion of scarlet fever cases treated in hospital was greatest in Blackpool (B.) 93 per cent., Chorley (B.) 88 per cent., Farnworth 88 per cent., Morecambe (B.) 88 per cent., Adlington 74 per cent., Southport (B.) 70 per cent., Leigh (R.), 64 per cent., Lancaster (B.) 63 per cent., Thornton 63 per cent., Withington 59 per cent., West Lancashire (R.) 57 per cent., and Moss Side 56 per cent.

Disinfection.—The districts now supplied with efficient steam disinfecting appliances number 31 as compared with 28 in the previous year ; the 3 additional districts provided are Moss Side with Goddard, Massey and Warner's steam disinfector, and Nelson (B.) and Withnell with movable apparatus. Eleven authorities carry out their disinfection at the hospitals with which they are associated, and 9 take advantage of arrangements entered into with neighbouring County Boroughs. Dry

heat apparatus is still used in 14 districts, while 70 have no proper appliances. The provision of steam apparatus at Middleton (B.) has been delayed owing to the difficulty of obtaining a suitable site ; at Levenshulme a disinfecter (steam) will shortly be erected in conjunction with refuse destructor, and at Litherland, Leigh (B.), and Morecambe (B.) this desirable equipment has received consideration. In the following districts the Medical Officers of Health call attention to the difficulty experienced in effecting proper disinfection, viz :—Accrington (B.), Audenshaw, Barrowford, Clitheroe (B.), Denton, Orrell, Tyldesley-with-Shakerley, and Lancaster (R.). House disinfection is generally carried out after the occurrence of infectious disease—including phthisis in Allerton, Lytham, Morecambe (B.), Rawtenstall (B.), &c.—and in most districts reliance is still placed on “stoving” with sulphur, although spraying with solution of corrosive sublimate (1 in 1,000) is sometimes used. In many districts the use of formaldehyde either as a spray or vapour is employed, and solutions of chlorinated lime, carbolic acid, or other form of soluble disinfectant are used for washing the floors, woodwork, &c., more especially in connection with school cleaning.

The Midwives Act was passed on the 31st of July, 1902, with the object of securing the better training of Midwives and regulation of their practice. This important Act comes into force on the 1st April, 1903, and, under Sec. 8, each Council of an Administrative County will be the Local Supervising Authority over Midwives within their area, and it will be the duty of the Local Supervising Authority—

- 1.—To exercise general supervision over all Midwives practising within its area.
- 2.—To investigate charges of malpractice, negligence, or misconduct.
- 3.—To suspend any Midwife from practice if necessary to prevent the spread of infection.

- 4.—To report to the Central Midwives' Board the name of any Midwife convicted.
- 5.—To supply in the month of January in each year to the Central Midwives' Board the names and addresses of all Midwives who, during the preceding year, have notified their intention to practice within their area, and to keep a current copy of the Roll of Midwives.
- 6.—To report to the Central Midwives' Board the death of any Midwife or any change in the name or address of any Midwife.
- 7.—To give due notice of the effect of the Act to persons at present practising.

The Local Supervising Authority may delegate any powers or duties conferred upon them to a Committee consisting either wholly or partly of Members of the Council, and women are eligible to serve on such Committee.

The County Council may also delegate any powers or duties conferred on them by the Act to any District Council within the area of the County.

It does not seem to be desirable for the County Council at present to delegate any of their powers to District Councils. Among the disadvantages likely to arise the following may be mentioned :—

- (a) Unequal efficiency in various parts of the County.
- (b) The County Council will have to pay the expenses of the District Councils without any power to control their actions.
- (c) Difficulty of fixing a limit to the District Councils, &c., in putting the Act into operation without any experience as to what should be a maximum cost.
- (d) In delegating authority to a District Council the County Council is not freed from legal responsibility.

(e) The labour and expense of administering the Act through several District Councils would be greater than if retained by the County Council.

(f) Powers once delegated are difficult to recall.

It is further provided by the Act that while the Local Supervising Authority is required (Section 8, Sub-Section 3) to suspend any midwife from practice if such suspension appeared necessary in order to prevent the spread of infection, the Act provides no means whereby the County Council can obtain prompt information of the occurrence of infectious disease in a midwife's practice. It is suggested that the midwife should be required to notify the existence of infectious disease in her practice to the Medical Adviser of the County Council, and that he should have power to arrange with the local Medical Officers of Health for further information or assistance in carrying out the provisions of the Act.

Sanitary Administration.—The sanitary work of the various County districts has been effectively carried out, and the annual reports continue to give ample evidence of the increasing attention and scientific interest that is being paid to sanitary matters. In conjunction with this it is satisfactory to observe a declension in such diseases as “fever,” diarrhœa, phthisis, and those diseases most influenced by improved sanitary conditions. Throughout the County cognisance was taken of 41,858 miscellaneous nuisances, or 10,637 more than in the previous year; these required the service of 25,549 notices, and legal proceedings in 135 instances. Systematic house visitation is of great importance, and ought to receive attention in every district. In Ashton-under-Lyne (B.) it is satisfactory to observe that the Ladies' Health Society has, according to the Medical Officer of Health, done such good work. “They have, for the second time, completed a house-to-house visitation of the whole of their districts, and it is gratifying to find that the people receive them more friendly

than on their first visit ; they also find the houses cleaner, and they report a decided improvement in the general sanitary surroundings.”

The connection between privy middens and unpaved land surrounding dwellings has already been referred to as productive of typhoid fever and diarrhœa, and more attention might with advantage be paid by Local Authorities to these insanitary conditions which are so frequently met with.

HOUSING OF THE WORKING CLASSES has received much consideration in the County districts, and 46 Local Authorities have taken action, resulting in 419 insanitary houses being either closed or made fit for human habitation. The effect of overcrowding on the production of consumption and social degradation is now recognised ; Dr. Parker, Lancaster (B.), however, goes so far as to say that in streets of back to back houses the death-rate was highest in the narrowest streets, and diminished in proportion to the increase in the width of the streets. Dr. Chronnell (Hindley) says “in my opinion all the single houses in the district ought to be closed, the privy middens abolished, and all yards paved and flagged ; and then some power ought to be in the hands of the Sanitary Authority to compel owners and tenants to keep their dwellings sweet and clean ;” while Dr. Fletcher (Ince-in-Makerfield) desires his Council to make more stringent bye-laws, especially in regard to proper protection of the sites of new houses from ground air and damp, and also to insist that “gradually all the yards or courts at present unpaved should be properly paved.”

CANAL BOATS ACTS have been duly enforced in those districts through which canals pass. The local reports giving figures show that 1,170 boats have been inspected, and as a result 54 infringements of the Acts requiring notices were observed. The most numerous inspections of canal boats took place in Abram, 48 ; Eccles, (B), 61, with 2 infringements ; Ince-in-Makerfield, 61, with 8 infringements ; Lancaster (B.), 63, with

3 infringements ; Leigh (B.), 139 ; Littleborough, 43 ; Middleton (B.), 50, with 6 infringements ; Widnes (B.), 70, with 11 infringements ; Worsley, 76, with 16 infringements ; Clitheroe (R.), 110 ; Garstang (R.), 43, with 3 infringements ; Leigh (R.), 180 ; Warrington (R.), 38 ; and West Lancashire (R.), 46.

SLAUGHTER-HOUSES.—In addition to the 7 boroughs and 1 urban district mentioned as having abattoirs in last year's report, Great Harwood has been provided in this respect, and at St. Annes-on-the-Sea and Leigh (B.) abattoirs are in course of erection. A large proportion of the existing private slaughter-houses are far from satisfactory, and make it difficult to guard the public against the introduction into the market of animal food unfit for consumption. Complaints of the insanitary state of private slaughter-houses, and as to their proximity to dwellings and neglect in regard to the removal of offal and proper cleansing of the premises, are contained in the reports received from many districts. There are also references respecting the condition of factories and workshops, bakehouses, &c.

The Factory and Workshop Act, 1901, came into force 1st January, 1902. It repeals or consolidates all previous legislation on the subject, and imposes several new and important duties on Medical Officers of Health and Local Authorities. Every Medical Officer under Section 132 is required in his Annual Report to deal specifically with the administration of the Act in workshops and workplaces (so far as the matters under the charge of the District Council are concerned), and he must send a copy of this part of his Report to the Secretary of State.

In the case of factories the duties of a District Council are few. The Council is charged with the duty of seeing that every factory in its district is provided with means of escape in case of fire ; and also has special duties in regard to domestic factories and underground bakehouses. Another duty in regard to factories is (in districts where Part III. of the

Public Health Acts Amendment Act, 1890, is in force) to see that suitable and sufficient sanitary conveniences are provided.

In regard to workshops and workplaces District Councils have important duties, which may be classified under four heads :—(1) The sanitary condition of workshops and workplaces generally ; (2) provision of means of escape from fire ; (3) special sanitary regulations for bakehouses ; (4) home work

(1.) SANITATION.—“The District Council is made the authority responsible for the sanitary condition of the workshops and workplaces in its district, while the Factory Inspector is responsible for the sanitary condition of factories. ‘Sanitary conditions’ include (*a*) the cleanliness, (*b*) air space, (*c*) ventilation, and (*d*) drainage of the floors of workshops and workplaces. For these purposes the provisions of sec. 91 of the Public Health Act, 1875, apply and are supplemented by additional provisions in the Factory Act. It should be noted that the other sanitary provisions in Part I. of the Act, viz., with regard to temperature and sanitary conveniences (secs. 6 and 9) are not brought under the law relating to public health and will therefore be enforced by the Factory Inspectors.”

“The requirements of the Act in the matters above-mentioned, which it is the duty of a District Council to enforce, are as follows :—

“(a) *Cleanliness* (sec. 2).—Every workshop and workplace must be kept in a cleanly state and free from effluvia, and if not so kept may be dealt with by the Council as a nuisance under sec. 91 of the Public Health Act, 1875.

“If the medical officer of health, or the inspector of nuisances, certifies that it is necessary for the health of the persons employed that a *workshop*, or any part of a workshop, should be limewashed, cleansed or purified, the District Council may give notice to the owner or occupier of the workshop to carry out such limewashing, cleansing or purifying as

the case may require, within a time specified in the notice. If the person to whom the notice is addressed fails to comply with it in the time specified, he will be liable to a penalty of 10s. for each day during which the default continues, and the Council may themselves undertake the work and recover the expense from him in a summary manner."

"(b) *Air space* (secs. 2, 3).—Workshops and workplaces must not be overcrowded while work is carried on so as to be dangerous or injurious to the health of the persons employed, and a workshop or workplace which is overcrowded may be dealt with as a nuisance under sec. 91 of the Public Health Act. A *workshop* is deemed to be overcrowded unless in each room at least 250 cubic feet of air space (or during overtime 400) are allowed for each person employed in the room, and the Act requires a notice to be affixed in the workshop specifying the number of persons who may be employed in each room of the workshop."

"(c) *Ventilation* (secs. 2, 7).—Every workshop and workplace must be ventilated in such a manner as to render harmless as far as practicable any gases, vapours, dust, or other impurities generated in the course of the work that are a nuisance or injurious to health. Any workshop or workplace not so ventilated may be dealt with as a nuisance under sec. 91 of the Public Health Act.

"This general provision is supplemented in the case of workshops by a special requirement introduced for the first time by the Act of 1901, that in every room in a workshop sufficient means of ventilation must be provided and sufficient ventilation maintained, and where a standard of sufficient ventilation has been prescribed by the Secretary of State (as he has now power to do) for any class of workshops, that standard must be observed. Workshops, however, where men only are employed are excluded from the operation of this requirement. Any workshop where this requirement is contravened may be dealt with as a nuisance."

(2.) SAFETY FROM FIRE.—“Every factory of which the construction was commenced after 1st January, 1892, and every workshop of which the construction was commenced on or after 1st January, 1896, must, if more than 40 persons are employed, be furnished with a certificate from the District Council that it is provided with such means of escape in case of fire for the persons employed therein as can reasonably be required in the circumstances of the case. (The provision in the previous Acts which limited the requirements to the storeys above the ground floor is now repealed). Before giving the certificate the Council must have the factory or workshop examined, and must satisfy itself that means of escape are provided as required by the Act.”

(3.) BAKEHOUSES.—The regulations require that—

“1.—A bakehouse must not contain or communicate directly with a water closet, earth closet, privy, or ashpit; a cistern supplying water to a bakehouse must be separate from any cistern supplying water to a water closet; and a sewage pipe or drain must not have any opening in the bakehouse.

“2.—All inside walls and ceilings of rooms and all passages and staircases must be limewashed every six months, or coated with three coats of paint or varnish every seven years and washed with hot water and soap every six months; if not, the bakehouse will be deemed not to be kept in conformity with the Act.

“3.—Places on the same level with a bakehouse and forming part of the same building must not be used as sleeping places unless effectually separated from the bakehouse by a partition from floor to ceiling and provided with an external glazed window 9 square feet, of which $4\frac{1}{2}$ feet must be made to open.”

“ *Underground Bakehouses.* — An underground bakehouse (that is, one in which any room used for baking, or for any purpose incidental thereto, has its floor more than three

feet below the footway of the adjoining street or below the ground adjoining or nearest to the room) must not be used unless it was so used on August 17th, 1901. And an underground bakehouse in use prior to that date must not be used after January 1st, 1904, unless certified by the District Council to be suitable for the purpose, but appeal is allowed if the certificate is refused, or if the occupier claims that the cost of the alterations necessary in order to obtain it ought to be borne, or shared, by the owner. (Sec. 101.)”

(4.) HOME WORK.—Powers of controlling the conditions under which certain classes of work are done in the homes of the workers are for the first time given to District Councils. It is now enacted that “if any place in which home work is being done in connection with the business of a factory or workshop is injurious or dangerous to the health of the persons working there, the Council may, by notice to the occupier of the factory or workshop, or to any contractor employed by such occupier, prohibit him from giving out work to be done in that place.”

Dairies, Cowsheds, and Milkshops.—Regulations under the Order of the Local Government Board came into operation in two additional districts, namely: Droylsden in September and Oswaldtwistle in August, while revised regulations became operative in Birkdale, Radcliffe and Prestwich; Billinge has already submitted regulations to the Board for approval. There still remain 31 districts, including the rural districts of Chorley, Garstang, Lunesdale, Whiston and Wigan, without regulations or any proper supervision.

In previous Reports attention has been called to the neglect on the part of the Councils of districts where cows are chiefly kept, in securing, as far as possible, the purity of the milk supply. This want of supervision over dairy farms is occasionally the cause of disease distribution among consumers of contaminated milk residing in districts more or less distant.

To prevent, as far as possible, such a danger, special powers have been obtained in Lancashire since 1899 by 12 county boroughs, 6 non-county boroughs, and 1 urban district, for regulating and supervising, under certain conditions, the milk-producing farms beyond their boundaries. Outside action ought not to be necessary if local authorities carried out their duty of exercising reasonable supervision. There are references made by Medical Officers of Health of many districts regarding the seriously defective condition of shippens owing to overcrowding, insufficient cubic space, and want of ventilation. In this class of shippen may be found tuberculous cows giving milk for public consumption which may be productive of disease. As showing the character of milk sold in certain districts it may be mentioned that in Waterloo-with-Seaforth 44 samples of milk were submitted for bacteriological examination, with the result that 3 were found to be tubercular, 29 contained the bacillus coli communis, and 5 the bacillus enteritidis sporogenes. With reference to the samples found to be tubercular, on two farms a veterinary surgeon examined the cows, and the tuberculin test being applied certain cows re-acted; in respect of the third sample the milk was obtained from a farm outside the district, and the Local Authority was communicated with. The connection between milk and typhoid fever has been referred to in the summaries of reports received from Pemberton, Rawten-stall (B.), and Walton-le-Dale.

Smoke Nuisance.—Action was taken by 55 authorities for the suppression of black smoke as compared with 53 in the previous year and 39 in 1900. The 1250 observations taken represent 49 less than in 1901, and there were also 32 fewer prosecutions. The following districts showed the greatest activity with respect to black smoke, viz.: Farnworth with 61 observations, Lancaster (B.) 59, Leigh (B.) 40, Littleborough 48, Middleton (B.) 97, Moss Side 60, Much Woolton 150, Stretford 89, and Swinton and Pendlebury 63. It will be seen

that in certain districts the proportion of offences followed up by legal proceedings is so small as to cause one almost to doubt the expediency of taking observations.

DISTRICTS.	No. of Smoke Observa- tions.	Time limit per hour— Minutes.	No. of Legal Pro- ceedings.	REMARKS on action taken.
Accrington (Boro)	24	8	..	Order to abate obtained
Bacup (Boro)	5	6	..	
Barrowford	5	..	..
Billinge	3	..	..
Birkdale	3	..	..
Blackpool (Boro).....	14	5	1	
Church	30	8	..	
Clayton-le-Moors	6	..	..
Clitheroe (Boro)	Several	..	..
Colne (Boro).....	33	..	..
Darwen (Boro).....	16	10	..	Ordered to abate and to pay costs.
Droylsden	Many	..	..
Eccles (Boro)	24	4	1	
Failsworth	22	8	..	
Farnworth	61	7½	..	
Fleetwood.....	Daily	10	..	
Gorton	10	16	..	
Great Crosby	Many	..	..
Great Harwood	16	10	..	
Heaton Norris.....	12	7 nuisances abated.
Heywood (Boro)	37	10	2	
Horwich	10	15	..	
Irlam	Frequent	16	..	
Kearsley	4	..	..
Lancaster (Boro)	59	3	..	
Leigh (Boro)	40	12	..	
Levenshulme	2	10	..	
Litherland	Continuous	..	..
Littleborough	48	8	1	Black smoke emitted for 19½ minutes in the hour; magistrates dismissed the case after the defendant had acknowledged the offence.
Lytham	3	..	..
Middleton (Boro)	97	10	7	
Milnrow	42	8	..	
Moss Side	60	..	..
Much Woolton	150	3	..	
Norden	Several	..	..
Padiham	10	15	..	
Pemberton	Frequent	..	..
Prestwich	27	5	..	

DISTRICTS (Continued.)	No. of Smoke Observa- tions.	Time limit per hour— Minutes.	No. of Legal Pro- ceedings.	REMARKS on action taken.
Radcliffe	48	10	..	Time limit exceeded in 13 instances; 8 legal notices served.
Ramsbottom	25	12	..	
Royton	Many	..	3	
Skelmersdale	1	Orders to abate obtained and pay costs in each instance.
Southport (Boro)	6	..	..
Stretford	89	4	4	
Swinton and Pendlebury..	63	5	..	
Thornton	Constant	..	..
Tottington	32	Time limit exceeded in 12 instances. Legal proceedings resulted in fines being imposed amounted to £12 0s. 6d.
Turton	31	10	..	
Waterloo-with-Seaforth....	12	..	..
Whitefield	12	10	..	
Withington	6	..	..
Withnell	3	6	..	
Worsley	22	10	..	
Barton-upon-Irwell (R.) ..	7	8	1	
Bury (R.)	20	..	..
Total.....	1250	..	20	

Scavenging and Refuse Removal.—Of the total districts scavenging is described as “satisfactory” in 117, “fair” in 9, and “not satisfactory” in 9. In the latter category are included Leigh (B.), Rainford, Thornton, Tottington, Blackburn (R.); the villages of Hornby, Caton, and Brookhouse in Lunesdale (R.); Sefton (R.) except in West Derby; Ulverston (R.) except in Claife, Coniston, and Hawkshead; and West Lancashire (R.) except in Ainsdale, Aughton, and Formby. The work of scavenging is performed by the authorities in 96 districts; in 6 districts it is partly contracted for, and in 21 districts it is wholly carried out by contract. In 5 districts the authorities and occupiers carry out the scavenging, and in 6 districts the work is done by the owners and tenants. Destructors have been provided at Heywood (B.) and Moss Side, and are now in the course of erection at Chorley (B.), and Eccles (B.).

In the following districts the provision of appliances for consuming refuse are under consideration, viz.: Crompton, Failsworth, Gorton, Heysham, Middleton (B.), Newton-in-Makerfield, Ramsbottom, &c.

It is satisfactory to observe that the insanitary practice of storing excretal matter and domestic refuse in receptacles contiguous to human dwellings is giving way to the water-carriage system. During the year 2,886 privy middens and 164 pail closets were so converted in the various County districts, the greatest activity being displayed in this direction by Accrington (B.) 58, Ashton-under-Lyne (B.) 866, Dalton-in-Furness 59, Eccles (B.) 160, Failsworth 87, Gorton 195, Haslingden (B.) 97, Heywood (B.) 244, Horwich 73, Litherland 209, Oswaldtwistle 118, Ramsbottom 66, Stretford 283, Swinton and Pendlebury 63, Tyldesley-with-Shakerley 72, and Withington 59. At Turton the Council offer a premium upon the conversion of existing privy middens to the water-carriage system, whilst at the same time they permit houses to be erected with the old and pernicious ashpit accommodation. The part played by privy middens in the production of disease has already been referred to under the head of typhoid fever.

House Drainage, Sewerage, and Sewage Disposal.—

A vast amount of progress has been made in the sewerage of districts and carrying out improvements at outfall works. Sewerage operations have been most active in Audenshaw, Birkdale, Dalton-in-Furness, Fulwood, Grange, Lathom and Burscough, Lytham, Newton-in-Makerfield, Withington, Garstang (R.), &c. In the following districts works for treating the sewage have advanced towards completion or been extended:—

ACCRINGTON (B.). Alterations carried out at the joint outfall works at Coppy Clough, with a view to improving the character of the effluent.

ASHTON-UNDER-LYNE (B.). Considerable alterations have

taken place at the outfall works ; additional tanks and filters have been completed, but so far not been put in operation.

CHORLEY (B.). The sewage works have been improved by the extension of filter beds, and additional land has been purchased for irrigation purposes. It is proposed to apply for a loan of £4,440 for the sewerage, &c., of Cowling and Crosse Hall.

CLITHEROE (B.). Sewage works not yet completed, but 82 per cent. of the houses are now permanently or temporarily connected with the main sewer.

COLNE (B.). Sanction has been obtained to borrow £11,000 for the extension of sewers and sewage works. The scheme provides for treatment of the whole of the sewage in open septic tanks, followed by double contact in bacteria beds, and final irrigation on land.

ECCLES (B.). Four acres of bacteria beds are now being laid out.

FAILSWORTH. An additional five acres of land has been obtained for filtration purposes.

GORTON. Extension of the present sewage works are now in hand, including bacteria beds, &c.

HORWICH. Will shortly apply to the Local Government Board for sanction to a loan of £12,000 for sewage works extension.

LEYLAND. The sewage works are being extended by the addition of two precipitation tanks, sludge pits, &c.

LONGRIDGE. New sewage filters were completed about the middle of the year.

NORDEN. A Local Government Board Inquiry has been held respecting a loan of £11,960 for new sewage works.

OSWALDTWISTLE.—Three bacterial contact beds completed during the year, and three sprinkler beds, each 54ft. in diameter and 9ft. deep, are now in course of construction at an estimated cost of £2,340.

RAMSBOTTOM. "The work for the completion of the outfall sewage works has now been commenced under contract, and it is expected the scheme of treatment will be in operation in about 18 months."

ROYTON. Improvements at sewage works almost completed.

WESTHOUGHTON. Two additional sludge beds constructed.

WHITWORTH. The scheme for the extension of outfall works, at a cost of £1,250, almost completed.

BURNLEY (R.). In July an Inquiry was held by the Local Government Board into an application to borrow £7,000 for works of sewerage and sewage disposal. The scheme provides a tank capacity of about 60,000 gallons, two bacterial filters, and a storm water filter. Briercliffe and Haggate, Cliviger and Holme—Sites have been selected for sewage works, but nothing further done. Blackho and Wheatley Lane—Nothing done. Worsthorpe—Site selected and plans for works completed. Higham—Site selected. Altham—Additional septic tanks completed.

LIMEHURST (R.). New sewage works at Waterloo and Bardsley completed, and in course of construction at Cross Bank.

PRESTON (R.). Penwortham scheme, estimated to cost £11,285, still awaiting sanction of Local Government Board.

WEST LANCASHIRE (R.). Ainsdale—Application made to borrow £6,500 for sewage purposes, and at Formby Local Government Board Inquiry held respecting loan for £41,000 for scheme of sewerage.

There are now sewage works in operation in 59 of the 62 County districts within the area under the control of the Mersey and Irwell Joint Watershed Committee, and 60 works in operation in 42 districts within the Ribble Watershed area. In the two watersheds four new schemes are being carried out, besides the extensive works of improvement already referred to.

Additional sewer ventilation has been provided at Birkdale, Blackpool (B.), Dalton-in-Furness, Heywood (B.), Litherland, Lytham, Southport (B.), &c., while systematic sewer flushing has been carried out at Little Woolton, Lytham, Milnrow, Morecambe (B.), Whitworth, Widnes (B.), Barton-upon-Irwell (R.), &c. In the following districts drain testing has received special attention :—Blackpool (B.), 2,272 house drains tested; Eccles (B.), 336 drains tested and 241 subsequently opened for inspection; Great Crosby, 126 drains tested, and defects discovered in almost every case; Lytham, smoke test applied to 197 house drains; Morecambe (B.), all new drains tested with either smoke or water; Southport (B.), 425 drains tested with smoke; Stretford, 664 drains tested in respect of old property, 641 drains of new property tested, 73 sanitary fittings tested (old property), 282 sanitary fittings tested (new property); Waterloo-with-Seaforth, smoke test applied to 337 house drains; and Withington, the smoke test was applied to 13 premises.

Water Supply.—In the appended summaries will be found special reference to the information obtained from each district with respect to water supply, and it is gratifying to observe the marked progress that has been made in this direction. The public water supply to Accrington (B.), Church, Clayton-le-Moors, and Great Harwood is described by the Medical Officer of Health of one of the joint districts as more satisfactory than formerly; there is a freedom from vegetable growth, but the water still contains a certain amount of organic impurity. The water supplied by the Bury Joint Board, to Prestwich, Haslingden (B.), Ramsbottom, Tottington, Bury (R.), &c., is said to be improved and of good quality, “but at present very liable to mixture with mud and vegetable debris”; filter beds are, however, in course of construction. The Fylde water, supplied to a large number of districts, including Blackpool (B.), Fleetwood, Kirkham, Lytham, St. Annes, Fylde (R.), Garstang (R.), &c., is occasionally brownish

in colour, owing to particles of peaty matter, and might be improved by passing through filter beds. Efforts are being made to induce the Fylde Joint Board to supply a large area now practically without drinking water, including Cockerham, (Lancaster R.), Pilling, Winmarleigh, Cabus, Nateby, with several other villages in Garstang (R.), and the urban district of Preesall-with-Hackinsall. Although the matter has on many occasions been fully reported on and received the attention of the Local Government Board, so far the Authorities have not been able to arrange a scheme for this desirable object. The Nelson (B.) water supply has been largely increased by the completion of a reservoir capable of holding 80 million gallons. At Ulverston the water is complained of as having a "fishy" taste, and it is stated by the Medical Officer of Health that the feeders of the reservoir are open to contamination from various sources. The Report from Blackburn (R.) states that in Mellor water mains are being laid, and there has been an extension of the water supply in Billington from the mains of the Blackburn Corporation, and now, not only Langho, but the houses lying between that village and the boundary of the township of Whalley are supplied. At Burnley (R.) "the need for water supplies is happily narrowing down to smaller compass, the activity of the Council having effected in this respect quite a revolution." From Clitheroe (R.) it is reported that Chipping is in need of a good water supply; and the same want is also felt acutely at Silverdale, (Lancaster R.).

Sale of Food and Drugs Acts.—The following is an extract from the report of Dr. Campbell Brown, the Public Analyst for the Administrative County, on the proceedings taken under the Sale of Food and Drugs Acts:—

"During the year, 1,744 samples have been analysed, including 1,453 submitted by Superintendents of Police, 97 by the Special Inspector, and 194 by Inspectors for Local Authorities and Private Purchasers. Of these samples 171 were found to be offences.

“ They are classified as follows :—

656	samples of Milk	of which 66 were offences.
243	„ Butter	34 „
7	„ Bread and flour „	0 „
42	„ Tea and coffee „	1 was an offence.
110	„ Small groceries „	5 were offences.
43	„ Beer and stout „	0 „
321	„ Wine and spirits „	16 „
17	„ Confectionery	
	and jam	0 „
46	„ Drugs	5 „
259	Miscellaneous samples	44 „
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1744	Samples analysed, of which	171 were offences.
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“ The proportion of offences to total samples is 9·8 per cent. A tabular statement of the prosecutions is appended.

“ The total number of prosecutions was 121, with 96 convictions. Of these, 116 cases with 91 convictions were by the officers of the County Council, and 5 prosecutions by District Councils with 5 convictions so far as has been reported.

“ The penalties varied from 1s. to £20. The average penalty was £2 7s., fractionally less than last year.

“ Beer has been found free from arsenic this year owing to more careful methods of preparing malt.

“ The regulations issued by the Board of Agriculture in regard to milk standards have had a beneficial effect in the repression of fraud, and it is much to be desired that the recommendations of the Departmental Committee on Preservatives and Colouring Matters should be made legally binding in a similar way.

“ Not only do preservatives affect health by interfering with digestion, but they enable stale and unwholesome food to

remain saleable long after they ought to be destroyed, and foster the practice of substituting such articles as Dutch shrimps and lobsters for the freshly caught British crustacean.

“ As I mentioned in last Annual Report, the Committee’s recommendations are excellent, but they are not legally binding.”

TABLE SHOWING THE PROCEEDINGS IN EACH POLICE DIVISION AND BY OTHERS, 1902.

Divisions.	Total Samples.	No. of Offences.	Percentage of Offences.	No. of Prosecutions.	No. of Convictions.	RESULT OF PROSECUTIONS.	Penalties.	Costs.	Remarks.
N.L.D.	47	4	4	One fined £10,* one £5, one 20s., one 10s. and costs...	£ s. d. 16 10 0	£ s. d. 9 19 7	*Under Clause 17
S.L.D.	37	...	...	1	1	Fined 40s. and costs ...	2 0 0	1 17 2
G.D.	48	...	...	2	2	One fined £2, and one £1 and costs ...	3 0 0	1 17 5
Km. D.	92	...	...	4	3	Two fined £1, one 5s. and costs, and one dismissed ...	2 5 0	6 8 1
L.B.D.	40	...	...	3	2	One fined £2, one 10s. and costs, and one dismissed...	2 10 0	3 0 7
H.B.D.	87	...	...	1	1	Fined £2 and costs ...	2 0 0	0 18 6
Rs. D.	44	...	...	3	3	One fined £3, and two £1 and costs ...	5 0 0	4 18 7
Ac. D.	31	...	...	1	1	Fined 10s. and costs ...	0 10 0	1 8 3
L.D.	138	...	...	7	7	Four fined £5, one £1 1s., one £1, and one costs only ...	22 1 0	13 18 9
Bn. D.	62	...	...	3	3	One fined £5, one £2, and one £1 and costs ...	8 0 0	6 2 11
By. D.	90	...	...	6	5	One fined £5, one £2, and three 10s. and costs ...	8 10 0	7 1 5
					One pending				
R.D.	75	...	...	15	9	Two fined £1, three 10s., one 5s., three 1s. and costs, two cases under appeal, two dismissed on account of a warranty, and two dismissed without reason ...	3 18 0	3 14 7
A.D.	63	...	...	6	6	Three fined 10s. 6d., two 5s. 6d., and one costs only...	2 2 6	8 7 3
M.D.	305	24	13	Three fined £1, three 10s., one 5s., one 2s. 6d., four 1s., one costs only, one adjourned, one withdrawn, and two dismissed ...	5 1 6	18 11 8	*Second offence
					Seven cases pending				
S.D.	45	..	...	0	0		.....	.....
O.D.	33	...	...	3	3	One fined £10, and two £5 and costs ...	20 0 0	6 0 1
P.D.	60	...	...	2	2	One fined £5, and one £1 and costs ...	6 0 0	2 10 7
Ws. D.	46	...	...	1	1	One fined £20* and costs ...	20 0 0	0 11 7½
W.D.	66	...	..	0	0		.....	.....
Wgn. D.	44	...	...	1	1	One fined £5 and costs ...	5 0 0	0 11 0
	1453	...	...	87	67		134 8 0	97 18 0½
Inspr. Parkinson..	97	...	...	29	24	One fined £20, three £5, three £2, seven 20s., two 10s., two 5s., three 2s. 6d. and costs, three costs only, four pending, and one dismissed ...	49 17 6	Not reported
Total by County Officers ...	1550	146	9.4	116	91		184 5 6	97 18 0½	
Inspectors for District Councils and Private Purchasers...	194	25	12.8	5	5		41 5 0	4 9 0	
Total ...	1744	171	9.8	121	96		225 10 6	102 7 0½	

SUMMARY OF THE REPORTS

RECEIVED FROM

MEDICAL OFFICERS OF HEALTH

OF

URBAN AND RURAL SANITARY AUTHORITIES

FOR THE YEAR 1902.

URBAN SANITARY DISTRICTS.

Abram.—(Area in acres, 1,984 ; Estimated Population, 6,409).
—*Medical Officer of Health*, NATHAN HANNAH, L.R.C.P.E.;
Salary, £40.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate	38·3	...	39·2	...	44·5
Death-rate	19·3	...	26·7	...	22·3
Zymotic death-rate..... ..	3·27	...	7·27	...	4·31
Phthisis ,, 	0·31	..	1·26	...	1·05
Respiratory ,, 	4·83	...	4·90	...	5·42
Rate of deaths under 1 year to 1,000 births.....	174	...	225	...	200

The birth-rate for the year under review is the lowest recorded during the 10 years 1892-1901, and equal to 6·2 per 1,000 below the mean of that period. The death-rate, although well above the County average, is reduced 7·4 as compared with last year ; the zymotic rate declined 4·0, the phthisis rate 0·95, and the infantile mortality was also more favourable. Dr. Hannah says :—“ Improper and irregular feeding, with insanitary surroundings, are largely associated with the latter mortality.” Measles—the cause of 9 deaths—existed chiefly in the two earliest months of the year. Diarrhoea contributed 4 deaths, and whooping cough 1 death. Infectious diseases were less prevalent than in 1901, only 80 cases being notified, against 211. Scarlet fever contributed 20 cases with 3 deaths, typhoid fever 17 cases 2 deaths, diphtheria 29 cases 2 deaths, erysipelas 12 cases, and puerperal fever 2 cases.

Hospital Accommodation nil. Temporary accommodation for small-pox is now being erected.

Disinfection.—No apparatus.

Water Supply obtained from a reservoir in the locality—supplied by the Liverpool Corporation.

Sewerage, Scavenging, &c.—The effluent from the sewage works continues to be of a satisfactory character. The nuisance caused by the pollution of Borsdane Brook by sewage from a neighbouring district has not yet been abated. The Authority partly undertake scavenging, which is now more efficiently carried out than formerly.

Sanitary Inspection.—The insanitary condition of six comparatively new houses near Dover Bridge is commented upon: “the ill condition of things has evidently arisen from poor construction and bad materials.” The Medical Officer of Health recommends that the privy and ashpit accommodation of these houses be entirely reconstructed. Premises inspected under the “Factory and Workshop Act, 1901,” are “all in order and properly attended to.” One slaughter-house was condemned and closed. Dairies and cowsheds are kept under observation, and the whitewashing is regularly attended to, but the drainage of the greater number of the farms is unsatisfactory. The Inspector (Mr. Eatock) examined 48 canal boats; served 64 notices for the abatement of 127 nuisances, &c.

Accrington (Borough).—(Area in acres, 3,427 ; Estimated Population, 43,500.)—*Medical Officer of Health*, ARTHUR GREENHALGH, M.R.C.S., D.P.H. ; *Salary*, £100.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate	23·5	...	24·8	...	25·8
Death-rate	13·7	...	16·3	...	15·8
Zymotic death-rate.....	1·10	...	1·78	...	1·96
Phthisis ,, 	1·58	...	0·92	...	0·91
Respiratory ,, 	3·95	...	3·21	...	3·23
Rate of deaths under 1 year					
to 1,000 births.....	130	...	159	...	168

The general death-rate, zymotic rate, and the proportion

of infant deaths to births compare very favourably with previous years, and—with the exception of 1894—are the lowest recorded during the preceding decade. Dr. Greenhalgh refers to the practice of children of tender age being habitually carried out in the early mornings to be nursed while their mothers go to work, and he is of opinion that a crèche could be worked and made self-supporting, and would bear a rich harvest in the saving of infant life. Whooping cough was prevalent in the early part of the year and caused 16 deaths, while diarrhoea contributed 12 deaths, and measles 4 deaths. In dealing with the latter disease two schools were closed. Small-pox, with 4 cases, made its first appearance since 1899. Scarlet fever had a diminished prevalence, causing 115 cases 4 deaths, against 154 cases 9 deaths last year, 218 cases 4 deaths in 1900, and 398 cases 10 deaths in 1899. The remaining notifications were typhoid fever 35 cases with 6 deaths, diphtheria 27 cases 6 deaths, and puerperal fever 5 cases. Arrangements have been made for the voluntary notification of phthisis.

Hospital Accommodation.—Provision is made for the treatment of small-pox cases (12 beds), but for ordinary infectious diseases no accommodation is available. The 4 cases of small-pox reported above were isolated in the hospital.

Disinfection.—Frazer's dry heat apparatus is at present relied on. The Medical Officer of Health hopes that before long a more efficient disinfector will be constructed.

Water Supply fairly good—obtained from the Accrington, &c., Joint Board's waterworks.

Sewerage, Scavenging, &c.—Some alterations have been made at the joint outfall works at Coppy Clough with a view to improving the character of the effluent. It is to be regretted that the Baxenden district is yet without a satisfactory sewerage scheme. Scavenging is efficiently carried out by the Council's employees, the refuse being burnt in a destructor.

Sanitary Inspection.—The municipal abattoir and a few private slaughter-houses are well conducted, and the same may be said of the bakehouses, lodging-houses, and factories and workshops. The sanitary condition of dairies and cowsheds varies considerably. The new dairy and cowshed regulations have been published, and distributed to the cowkeepers and owners of farms. The period (two years) allowed by these regulations to enable the cowsheds to be put in good order expires in May 1903. The condition of schools as regards cleanliness and ventilation is not all that could be desired; in one case it was ascertained that the school-room was washed only once a year! Fifty-eight privy or pail closets were converted to the water-carriage system. The Inspector (Mr. Diggle) reports on 526 nuisances abated after the service of 262 notices. He took 24 smoke observations, &c. The appointment of a female sanitary inspector is again advocated.

Adlington.—(Area in acres, 1,062; Estimated Population, 4,594.)—*Medical Officer of Health*, F. J. A. MAYES, M.R.C.S.; *Salary*, £20.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate	30·6	...	27·6	...	31·6
Death-rate	14·5	...	11·4	...	15·4
Zymotic death-rate.....	2·82	...	1·10	...	1·75
Phthisis ,, 	0·43	...	0·66	...	0·84
Respiratory ,, 	2·39	...	0·66	...	3·39
Rate of deaths under 1 year to 1,000 births.....	113	...	112	...	134

As compared with last year the birth and death rates show an increase of 3·0 and 3·1 per 1,000 of the population respectively. The zymotic rate is much above the average, owing to 10 deaths from diphtheria. Typhoid fever caused 2 deaths and diarrhoea 1 death. The principal feature of the year was an alarming outbreak of diphtheria in the early months; 130 cases

were notified, and, as stated above, 10 deaths took place. As a result of exhaustive inquiries, the source of infection pointed so strongly to the National School that it was closed by the Local Authority. On examination of the school drains serious defects were discovered quite close to the class-room for children, and the smoke test showed that communication with the space under the class-room floor had been made by rats, the floor of this space or basement being formed of ordinary earth. These conditions were at once remedied. As a result of my investigations into this outbreak I recommended the Local Authority to

- (a) Make provision against the danger inherent to privy middens, unpaved and undrained back streets, and land or yards in a similar condition adjacent to dwellings.
- (b) Arrange for bacteriological examinations of suspicious sore throats, and provide for public use a supply of antitoxin.
- (c) Make provision for more efficient disinfection, hospital isolation, and proper sanitary supervision of the district, and
- (d) Undertake the periodical inspection of schools—more especially with respect to drainage, ventilation, and general sanitary conditions. The floors of school-rooms should be constructed of well-seasoned narrow planks of hard wood such as pitch-pine or oak with dove-tailed joints, or blocks of wood set in asphalt and so arranged as to prevent interstices between the joints. When there is a basement or space beneath the school-room it should be thoroughly ventilated, and the floor should be covered with concrete.

Scarlet fever gave rise to 62 cases, typhoid fever 3 cases, erysipelas 13 cases, continued fever 2 cases, and puerperal fever 1 case.

Hospital Accommodation.—During the year 46 cases of scarlet fever and 10 of diphtheria were removed to the joint hospital.

Disinfection.—No apparatus. Fifty houses fumigated.

Water Supply—obtained from Blackrod—is, on the whole, good, but requires filtration.

Sewerage, Scavenging, &c.—Plans have been submitted to the Local Government Board for an additional tank and new filters at the outfall works. Scavenging is carried out by the Authority “as well as possible.” Unpaved and undrained land is not uncommonly met with in the vicinity of houses, and this is fouled with sewage and fæcal deposit. The privy-midden system is in vogue, and many being deep, retain water, and give off emanations which pollute the atmosphere.

Sanitary Inspection.—The dwellings are chiefly of the artisan class, provided with only two rooms, and several instances of overcrowding came under notice. Bakehouses, slaughter-houses, dairies, and cowsheds are said to be in good sanitary condition, but, unfortunately, the latter are not subject to regulations. The Inspector (Mr. Farnworth) served 84 notices for the abatement of nuisances.

Allerton.—(Area in acres, 1,589; Census Population, 1,101.)

Medical Officer of Health, C. STUART PETHICK, M.B.;
Salary, £20.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate	15·4	...	19·0	...	21·8
Death-rate	5·4	...	7·2	...	10·3
Zymotic death-rate.....	0·90	...	nil.	...	0·92
Phthisis ,, 	nil.	...	nil.	...	0·52
Respiratory ,, 	nil.	...	0·90	...	1·72
Rate of deaths under 1 year to 1,000 births.....	nil.	...	47	...	101

The mortality statistics of this small district are again

satisfactory, only 6 deaths being recorded. Scarlet fever gave rise to 6 cases, and 1 terminated fatally. Some of the attacks were due to infection obtained from an unrecognised case attending school.

Hospital Accommodation available at the Liverpool Corporation hospital. Two patients were removed during the year.

Disinfection.—Frazer's apparatus provided. The Council offer to disinfect houses after death from tubercular disease.

Water Supply obtained from Liverpool.

Sewerage, Scavenging, &c.—Sewage is conveyed to the River Mersey. The Authority undertake scavenging.

Sanitary Inspection.—Examinations were made of 190 premises, and 5 notices were issued for the abatement of nuisances. Bakehouses, dairies, and cowsheds continue to give satisfaction,

Ashton-in-Makerfield.—(Area in acres, 6,251; Estimated Population, 19,134.)—*Medical Officer of Health*, NATHAN HANNAH, L.R.C.P.E.; *Salary*, £80.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate	38·8	...	39·8	...	43·2
Death-rate	19·5	...	19·0	...	19·7
Zymotic death-rate	3·81	...	3·40	...	3·35
Phthisis ,,	0·52	...	1·22	...	1·15
Respiratory ,,	4·39	...	3·29	...	4·07
Rate of deaths under 1 year to 1,000 births.....	176	...	188	...	178

As compared with the preceding decennial period the birth-rate for the year under review shows a reduction equal to 4·4 per 1,000. The general death-rate and infant rate are slightly below the average, but the zymotic rate is less

favourable. An epidemic of measles during the first five months of the year formed the subject of a special report. No less than 42 deaths resulted, alone equal to a death-rate of 2·1 per 1,000 of the population. In dealing with the outbreak four schools were closed. Diarrhœa was responsible for 17 deaths, diphtheria 8 deaths, typhoid fever 5 deaths, and scarlet fever 1 death. The notifications received amounted to 175, against 202 in 1901; scarlet fever contributed 67 cases, typhoid fever 18, diphtheria and membranous croup 45, erysipelas 25, continued fever 18, and puerperal fever 2. Several of the cases were no doubt due to insanitary surroundings, and in one instance—at Garswood—typhoid fever was very probably caused by impure drinking water. The Sanitary Inspector, in referring to this case, reported that “the domestic water supply is obtained from field drains, and sewage from new sewer in the field has been getting into it.”

Hospital Accommodation is described as “insufficient,” but it is pleasing to know that the present buildings are shortly to be extended. Fifty-three cases were isolated, viz., scarlet fever 32, typhoid fever 12, and diphtheria 9.

Disinfection.—No apparatus provided. Rooms fumigated numbered 141.

Water Supply, obtained partly from Liverpool and partly from the Council’s own reservoir, gives satisfaction.

Sewerage, Scavenging, &c.—Dr. Hannah reports that the effluents from the works at Brynn Gates and at Edge Green are “invariably good, but those from the beds at Low Bank and Garswood, and that from the area of broad irrigation at the farm, upon which a very great quantity of the sewage flows, do not come up to a good standard.” The so-called septic tank at Edge Green requires early attention, as the smell therefrom is very objectionable. Scavenging is done under the supervision of the Council’s officials.

Sanitary Inspection.—The Insanitary Property Committee have inspected several blocks of property that ought to be demolished or made habitable, and in some instances structural alterations are being carried out. Houses are in great demand, and it is very difficult to reduce the crowded condition of dwellings. Slaughter-houses are kept clean, but two appear to be in undesirable positions. Dairies and cowsheds receive regular attention, and the inspection of factories and workshops revealed 65 contraventions of the Act. The Inspector (Mr. Gamble) gives details of 804 nuisances dealt with. No smoke observations were taken.

Ashton-under-Lyne (Borough).—(Area in acres, 1,346; Census Population, 43,890.)—*Medical Officer of Health*, W. H. HUGHES, M.R.C.S.; *Salary*, £130.

Per 1,000 of Population.	1902.	1901.	Mean of 10 years, 1892-1901.
Birth-rate.....	27·9 ...	24·8 ...	28·2
Death-rate	19·1 ...	18·7 ...	21·2
Zymotic death-rate.....	1·48 ...	1·86 ...	2·32
Phthisis ,,	1·57 ...	1·79 ...	2·07
Respiratory ,,	3·91 ...	3·91 ...	4·67
Rate of deaths under 1 year to 1,000 births.....	142 ...	182 ...	198

The general death-rate shows a fractional increase as compared with last year, but it is 2·1 per 1,000 below the mean of the preceding 10 years. The zymotic, phthisis, and infant rates are more favourable. Dr. Hughes states that in his opinion the two main factors in the latter mortality are—“(a) the housing of the people in overcrowded and insanitary dwellings, (b) the appalling ignorance of young mothers of the working class as to how to feed and manage their infants.” Measles was responsible for 15 deaths and whooping cough 13 deaths. It is pleasing to be able to record that only 11 deaths took place from diarrhoea, against 57 in 1901. The dépôt

established in May, 1901, for the supply of modified and sterilized milk is doing highly satisfactory work; during the past year 82,125 bottles of modified, and 31,780 pint bottles of sterilized milk have been supplied, and the sale of both is on the increase. Small-pox gave rise to 22 cases, all of which were removed to the Borough hospital. One case was notified in each of the months of January, February, and March, 5 in November, and 14 in December. The first case occurred in a tramp, and several other attacks took place in this class of people. Scarlet fever was the cause of 207 cases and 14 deaths; the disease was epidemic throughout the year, but was at its worst during the first quarter. Owing to the insufficiency of hospital accommodation nearly all these cases had to be treated in their homes. Typhoid fever contributed 56 cases 7 deaths, diphtheria and membranous croup 21 cases 5 deaths, puerperal fever 5 cases, and continued fever 3 cases.

Hospital Accommodation.—During the year 23 cases of infectious disease, viz., small-pox 22 and typhoid fever 1 were isolated at the Borough hospital, and 7 cases of scarlet fever at the Westhulme hospital belonging to the Oldham Corporation. The present accommodation consists of only 16 beds, and owing to the various outbreaks of small-pox these were almost wholly kept in readiness for cases of this disease. The Corporation have now under discussion the question of purchasing a farm at Hartshead for the establishment of a small-pox hospital. At the same time the enlargement of the present hospital might be considered.

Disinfection.—Mason's apparatus provided. Sulphur fumigation of 508 rooms was relied upon.

Water Supply is of good quality.

Sewerage, Scavenging, &c.—Considerable alterations have taken place at the outfall works; additional tanks and filters have been completed, but so far not been put into operation. The Corporation carry out the scavenging in a satisfactory manner.

Sanitary Inspection.—Twenty-eight single houses have been condemned as unfit for human habitation, and 10 were demolished. Bakehouses are described as “good” and slaughter-houses, dairies, cowsheds, and milkshops “fair.” Lodging-houses and living vans receive monthly inspections and factories and workshops are kept under constant supervision. Privy-closets converted to the waste-water system numbered 866, and 195 were converted into ordinary w.c.’s. Sixty-one samples taken under the Sale of Food and Drugs Act were submitted for analyses; in addition 19 articles—11 milk and 8 ice cream—were examined bacteriologically. The Ladies’ Health Society in their second annual report state that “they have, for the second time, completed a house-to-house visitation of the whole of their districts, and it is gratifying to find that the people receive them more friendly than on their first visit; they also find the houses cleaner, and they report a decided improvement in the general sanitary surroundings.” The Chief Inspector (Mr. Potter) gives details of 2,523 nuisances dealt with, 2,074 of which were abated after the service of 789 notices. Again I may point out that the smoke nuisance has received no attention.

Aspull.—(Area in acres, 1,906; Census Population, 8,388.)—

Medical Officer of Health, L. COOKE, L.R.C.P.; Salary, £25.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate	36·7	...	36·9	...	36·0
Death-rate	19·3	...	22·2	...	18·6
Zymotic death-rate.....	5·24	...	5·12	...	3·03
Phthisis ,, 	0·47	...	0·35	...	0·66
Respiratory ,, 	4·76	...	4·29	...	4·50
Rate of deaths under 1 year					
to 1,000 births.....	152	...	151	...	164

For the period under review the mortality statistics cannot be considered satisfactory. Again a fairly high birth-rate is

accompanied by a death-rate well above the County average, while the zymotic rate is excessive. In the middle of the year an outbreak of measles occurred in the districts of Higher Bolton Road and Scott Lane, and 13 deaths resulted. The schools in the neighbourhood mentioned were closed with a beneficial influence on the progress of the outbreak. Diarrhœa contributed 12 fatalities, and whooping cough 8. Scarlet fever again had a somewhat extensive prevalence, more especially in the first quarter of the year; altogether 121 cases were notified with 6 deaths, as compared with 137 cases 4 deaths in 1901. Typhoid fever was responsible for 8 cases 2 deaths, diphtheria and membranous croup 13 cases 3 deaths, erysipelas 15 cases, and continued fever 1 case.

Hospital Accommodation is said to be available at Wigan, but for the third year in succession not a single case has been removed.

Disinfection.—The Wigan Corporation apparatus is used for the disinfection of clothing, bedding, &c.

Water Supply is constant and of good quality, but complaints are occasionally received from the higher parts of the district regarding the want of pressure.

Sewerage, Scavenging, &c.—Sewage is treated on the sewage farm belonging to Wigan. Scavenging, performed by contract, gives satisfaction.

Sanitary Inspection.—Since the abolition of many back-to-back houses the house accommodation generally is much improved. Paving of back yards and streets has added much to the comfort of those living in crowded places, as well as to the general sanitation of the district. Bakehouses, slaughter-houses, dairies, and cowsheds are described as “good,” and factories and workshops, canal boats, &c., give rise to no complaint. Seventy notices were issued for the abatement of nuisances.

Atherton.—(Area in acres, 2,265; Estimated Population, 16,211.)—*Medical Officer of Health*, JAMES MARSH, M.B.; *Salary*, £50.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate.....	37·1	...	33·0	...	37·0
Death-rate	17·2	...	18·6	...	18·7
Zymotic death-rate.....	3·02	...	4·62	...	3·65
Phthisis ,,	1·54	...	0·86	...	1·14
Respiratory ,,	3·76	...	3·14	...	4·53
Rate of deaths under 1 year to 1,000 births.....	134	...	201	...	174

As compared with the previous year the birth-rate shows an increase of 4·1 per 1,000 of the population, and the death-rate a decrease of 1·4. The zymotic rate declined 1·60, and the proportion of infant deaths to births was much more favourable. A severe epidemic of measles which prevailed in February necessitated the closure of 3 schools; notwithstanding this closure, the epidemic ran its course throughout the whole district, and Dr. Marsh says it seems hopeless to check an epidemic of measles unless information is received of the earliest cases and unless power is available to compel isolation. He advises “the compulsory notification of the first case occurring in a house, with power to stop notification if the epidemic became beyond control and notification thereby useless”! Ten deaths were ascribed to measles and 13 to diarrhoea. A case of small-pox was notified from the work-house, and immediate removal to the hospital at Astley took place; the patient came from Wigan. Scarlet fever gave rise to 159 cases 5 deaths; seeing that the extent of the outbreak is largely ascribed to the indiscreet and indiscriminate visiting of houses in which the disease existed, what action did the Authority take to obviate the danger? Typhoid fever notifications numbered 42 and the deaths 11. It is interesting to note that 31, or 73·8 per cent., of the total typhoid fever

cases occurred in houses provided with privy-middens, and 11, or 26·2 per cent., in houses with water closets. The remaining notifications were diphtheria and membranous croup 19 cases with 10 deaths, erysipelas 16 cases, and puerperal fever 2 cases. The Medical Officer of Health recommended the compulsory notification of phthisis, and subsequent disinfection of the infected houses, but so far his suggestions have not been adopted.

Hospital Accommodation.—Eighty-four cases were removed to the joint hospital at Astley, viz., scarlet fever 63, typhoid fever 20, and small-pox 1.

Disinfection.—Mason's steam apparatus is provided. Houses were fumigated with sulphur or formalin, and schools were also disinfected during the holidays.

Water Supply, reported as good, is obtained from the Manchester and Bolton Corporations.

Sewerage, Scavenging, &c.—Sewage is treated on the Leigh and Atherton joint sewage farm, but the effluent therefrom has not so far given entire satisfaction to the Mersey and Irwell Joint Committee. Scavenging is carried out in a satisfactory manner by the Authority's workmen. A refuse destructor is in operation.

Sanitary Inspection. — Bakehouses, slaughter-houses, lodging-houses, as well as dairies and cowsheds were generally found clean and well conducted. Eighty-eight premises were inspected under the Factory and Workshop Act; as a rule the premises are kept in a cleanly state, but some show a deficiency in ventilation and sanitary accommodation. In lieu of privy-middens 25 water closets and 168 waste-water closets were provided during the year. The Inspector dealt with 436 nuisances and served 67 notices.

Audenshaw.—(Area in acres, 1,241; Estimated Population, 7,339.)—*Medical Officer of Health*, F. W. ALLKIN, M.B.; *Salary*, £20 (no claim).

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate	29·5	...	20·7	...	26·6
Death-rate	17·1	...	13·2	...	15·9
Zymotic death-rate.....	1·63	...	0·82	...	1·53
Phthisis ,, 	0·54	...	0·82	...	0·98
Respiratory ,, 	2·04	...	2·21	...	3·26
Rate of deaths under 1 year to 1,000 births.....	156	...	153	...	150

The statistics for the year under review are marked by increases of 8·8 and 3·9 per 1,000 in the birth and death rates respectively as compared with 1901. The zymotic rate is doubled, and there is a slight increase in the infantile mortality. Many of the infant deaths were apparently influenced by “irregular and injudicious feeding, uncleanliness, and the nursing-out system.” Diarrhoea gave rise to 2 deaths, and measles 1 death. A doubtful case of small-pox was removed to hospital in the month of February. Scarlet fever caused 40 cases 4 deaths, diphtheria and membranous croup 36 cases 4 deaths, typhoid fever 5 cases 1 death, and erysipelas 2 cases. The increase in the number of diphtheria cases is believed to be due to the disturbance of the old drains and sewers rendered necessary in the carrying out of the new sewerage scheme.

Hospital Accommodation.—Two beds at the Hyde Corporation hospital are reserved for the use of this district, and 8 cases were removed, viz., small-pox 1, scarlet fever 2, typhoid fever 1, and diphtheria 4. A joint scheme for the provision of small-pox hospital accommodation is under consideration.

Disinfection.—Dr. Allkin recommends the Council to procure efficient appliances for the disinfection of bedding, clothing, &c.

Water Supply is obtained from springs and streams in the Swineshaw Valley belonging to the Ashton-under-Lyne Joint Board.

Sewerage, Scavenging, &c.—Good progress has been made with the intercepting sewers, and a portion of the sewage is now being treated at the works of the Stalybridge and Dukinfield Joint Sewerage Board. Scavenging receives attention at the hands of contractors.

Sanitary Inspection.—Many old houses exist in various parts of the district, and improvements are required, especially in connection with the closet accommodation. Bakehouses, slaughter-houses, dairies and cowsheds—periodically inspected—on the whole give satisfaction. The Inspector served 49 notices for nuisance abatement and nearly all were complied with.

Bacup (Borough.)—(Area in acres, 6,120; Estimated Population, 22,500.)—*Medical Officer of Health*, JOHN BROWN, M.D., D.P.H.; *Salary*, £100.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate	24·8	...	21·5	...	24·0
Death-rate	16·4	...	16·1	...	18·2
Zymotic death-rate.....	0·71	...	1·06	...	1·50
Phthisis ,, 	1·20	...	0·84	...	1·09
Respiratory ,, 	3·68	...	3·37	...	4·32
Rate of deaths under 1 year to 1,000 births.....	135	...	142	...	164

The birth-rate fractionally exceeds the average of the preceding decade, but the general death-rate, zymotic rate, and the infantile mortality each show a marked reduction. Dr. Brown says many of the deaths amongst infants are due to ignorance of the mothers in regard to feeding and clothing, to early marriages, and to the fact that many mothers go out

to work at the mills. Measles was the cause of 5 deaths, whooping cough 4 deaths, and diarrhoea 2 deaths. The occurrence of several cases of the latter disease amongst residents in one street led to an investigation, which showed that the drinking water supplied to these houses "was little better than sewage." This dangerous supply was stopped and town's water recommended. Notifications of infectious disease numbered 115, viz., scarlet fever 87 with 3 deaths, typhoid fever 5 cases with 1 death, diphtheria 3 cases with 1 death, erysipelas 15 cases, and puerperal fever 5 cases. The facilities offered for bacteriological examination in doubtful cases were not taken advantage of.

Hospital Accommodation.—The only hospital accommodation available is for small-pox. The great need of an isolation hospital for ordinary infectious diseases has been pressed upon the Health Committee, and steps are now being taken to secure a suitable site.

Disinfection.—No proper appliances. The fumigation of rooms after infectious disease is not thoroughly carried out, as from the Inspector's report only 30 rooms were disinfected during the year.

Water Supply.—In regard to quality and quantity the water supply on the whole gave satisfaction, but many of the private supplies are liable to pollution from surface washings.

Sewerage, Scavenging, &c.—Sewage is treated by the bacterial process at the joint outfall works at Ewood Bridge. The Chief Inspector of the Mersey and Irwell Joint Committee reports that very slow progress has been made in connecting up the sewage of this district, notwithstanding the fact that the joint outfall works have been in operation for some time. Scavenging is efficiently performed by the Authority.

Sanitary Inspection.—During the year a number of old houses at Bottoms Row, commonly known as the "Barracks,"

have been pulled down, and 1 cellar dwelling was closed. The 9 bakehouses (including 2 underground) are well conducted, and the condition of the 16 slaughter-houses is described as “fair,” but a public abattoir would be an improvement. The inspection of dairies and cowsheds devolves on the police. Under the Factory and Workshops Act 122 premises were inspected, 33 of which required some improvement. Forty-three conversions of pail and privy-closets to the water-carriage system took place. The Inspector (Mr. Baines) reports on 427 nuisances remedied. He served 386 notices, took 5 smoke observations, &c.

Barrowford.—(Area in acres, 1,385 ; Estimated Population, 5,000.)—*Medical Officer of Health*, F. E. DE BEEHO PIM. L.R.C.P.I. ; *Salary*, £20.

Per 1,000 of Population.	1902.		1901.		Mean of 9 years, 1893-1901.
Birth-rate	26·0	...	26·2	...	27·5
Death-rate	12·6	...	13·8	...	15·6
Zymotic death-rate.....	1·60	...	2·20	...	2·29
Phthisis ,,	0·60	...	0·60	...	0·68
Respiratory ,,	3·00	...	3·60	...	2·94
Rate of deaths under 1 year to 1,000 births.....	123	...	129	...	159

The birth and death rates declined 0·2 and 1·2 per 1,000 of the population respectively as compared with last year, and the zymotic, respiratory, and infant rates were also reduced. Measles and whooping cough each gave rise to 2 deaths, diphtheria 3 deaths, and scarlet fever 1 death. Small-pox made its appearance in March and caused 5 cases, all of which were promptly removed to the Nelson Corporation hospital. Scarlet fever was responsible for 29 cases, diphtheria and membranous croup 13 cases, typhoid fever 2 cases, erysipelas 8 cases, and puerperal fever 1 case. Owing to the prevalence

of the first two mentioned diseases in the first quarter all the day and evening schools were closed for three weeks.

Hospital Accommodation.—The arrangement with Nelson to take small-pox cases continues, but no provision has yet been made for the treatment of ordinary infectious diseases.

Disinfection.—Efficient disinfecting apparatus is wanted.

Water Supply very good—obtained from Nelson.

Sewerage, Scavenging, &c.—Sewage is treated by intermittent downward filtration. Scavenging is said to be well attended to by the Council's men, but "some of the streets are in a shocking condition."

Sanitary Inspection.—Dairies and cowsheds are well kept, in the latter, however, there is an insufficiency of light, air space, and ventilation. Unfortunately, dairy, &c., regulations are not in force. It is again reported that slaughter-houses do not comply with sanitary requirements. The canal boats examined were clean. Five smoke observations are reported upon, but further details of the Inspector's work are wanting.

Billinge.—(Area in acres, 4,596; Estimated Population, 4,250.)—*Medical Officer of Health*, RICHARD O. MATHER, M.B.; *Salary*, £30.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years 1892-1901.
Birth-rate.....	28·2	...	31·9	...	34·7
Death-rate	18·3	...	17·0	...	17·6
Zymotic death-rate.....	1·17	...	3·30	...	1·77
Phthisis ,,	1·17	...	0·47	...	0·96
Respiratory ,,	3·52	...	3·30	...	3·33
Rate of deaths under 1 year to 1,000 births.....	166	...	214	...	161

As compared with the mean of the preceding decade the

birth-rate shows a reduction of 6·5 and the death-rate an increase of 0·7 per 1,000 of the population. The zymotic, phthisis, respiratory, and infant rates vary but fractionally. Diarrhœa gave rise to 2 deaths, and measles, typhoid fever, and diphtheria 1 death each. There were few cases of notifiable disease, only 22 cases coming under notice against 40 in 1901. Scarlet fever contributed 12 cases, typhoid fever 3 cases, diphtheria 1 case, and erysipelas 6 cases. “Of the 12 cases of scarlet fever notified, 10 occurred in children who attended school in an adjoining district, and as the disease in question was prevalent in that district, and absent from Billinge at the time these cases were reported, there is every reason to believe that infection was contracted either at school or whilst visiting in the infected district.”

Hospital Accommodation.—A cottage hospital consisting of 4 beds is kept in readiness for small-pox.

Disinfection.—No apparatus available.

Water Supply described as “good.”

Sewerage, Scavenging, &c.—The sewage farms are stated to be well conducted, and “the effluents from them have in no case given rise to complaints.” Improvements have been made regarding ventilation and cleansing of the sewers. The Authority perform the scavenging.

Sanitary Inspection.—The insanitary property at Roby Well reported on last year has collapsed, two houses in Weaver’s Court have been closed, and an extremely damp house at Carr Mill Road has fallen into disuse. Bakehouses, slaughter-houses, dairies, and cowsheds apparently give satisfaction. Dairy and cowshed regulations have been submitted to the Local Government Board for approval. The 38 premises inspected under the Factory and Workshop Act were free from complaint. The abatement of 48 nuisances was secured as the result of 27 notices, and 3 smoke observations were taken.

Birkdale.—(Area in acres, 2,699; Estimated Population, 15,000.)—*Medical Officer of Health*, A. V. WHEELER, L.R.C.P.E.; *Salary*, £60.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate	19·0	...	22·4	...	23·2
Death-rate	14·4	...	14·0	...	14·6
Zymotic death-rate.....	0·26	...	1·12	...	0·96
Phthisis ,,	1·40	...	1·19	...	1·06
Respiratory ,,	2·13	...	1·83	...	2·05
Rate of deaths under 1 year to 1,000 births.....	129	...	147	...	143

The mortality statistics for the year under review are again of a satisfactory character, and compare favourably with the average of the preceding decade. The birth-rate is the lowest recorded during the last 12 years. An outbreak of measles proved very troublesome, but fortunately no deaths were recorded. The district was particularly free from whooping cough and diarrhœa. Scarlet fever was rather prevalent at the end of the year, and necessitated the closure of the Board School. Altogether 43 cases were notified. Typhoid fever contributed 7 cases 1 death, diphtheria and membranous croup 8 cases 3 deaths, and erysipelas 11 cases. Most of the diphtheria cases were submitted for bacteriological examination, and in 3 instances with negative results; anti-toxin treatment was invariably adopted. Many of the houses where infectious outbreaks occurred had insufficient sleeping accommodation and were not kept clean. The voluntary notification of phthisis has proved of great service in enabling the Authority to carry out disinfection as well as the cleansing of infected rooms.

Hospital Accommodation.—The cottage hospital was used for the treatment of 18 cases, viz., scarlet fever 17 and diphtheria 1. The Ducker hospital was kept in constant readiness for small-pox, but, fortunately, was not required.

Disinfection.—Frazer's apparatus available.

Water Supply obtained from the Southport Corporation is good and plentiful.

Sewerage, Scavenging, &c.—Sewage is treated by precipitation and filtration. Sewers have been extended, and additional ventilating shafts provided. The Authority carry out the scavenging in a satisfactory manner.

Sanitary Inspection.—Bakehouses and slaughter-houses are regularly visited by the Inspector, and a veterinary surgeon makes monthly reports relating to the capacity and general cleanliness of the cowsheds. Eleven privies were abolished and water closets substituted. The Inspector (Mr. Jump) gives details of 162 nuisances remedied; 22 others were under notice at the end of the year. Three smoke nuisances were abated.

Blackpool (Borough).—(Area in acres, 3,601; Estimated Population, 52,174.)—*Medical Officer of Health*, FRANCIS J. H. COURTTS, M.D., D.P.H.; *Salary*, £500.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years. 1892-1901.
Birth-rate.....	23·9	...	22·8	...	25·1
Death-rate	14·9	...	16·4	...	14·6
Zymotic death-rate	1·14	...	2·30	...	2·06
Phthisis ,,	1·07	...	0·96	...	0·95
Respiratory ,,	2·03	...	2·18	...	2·91
Rate of deaths under 1 year to 1,000 births.....	123	...	167	...	168

The estimated population is obtained by multiplying the number of inhabited houses in August (when the rate is levied) by the Census factor showing the average number of persons per inhabited house, viz., 4·766. The number of inhabited houses in the Borough in August, 1902, was 10,946, as compared with 10,647 in August, 1901—an increase of 299; and

the resident population is estimated at 52,174, as compared with 50,750—an increase of 1,424. The birth-rate is again low and equal to 1·2 per 1,000 below the mean of the preceding decade. This low rate is, no doubt, influenced by the preponderance of females of a marriageable age over males. At the recent Census the percentage of females to the total population was 55·764, as compared with a male percentage of 44·236, and the total number of women at the child-bearing period, 20-45, was 2,868 more than the male population at this age. The general death-rate (14·9) which compares favourably with 1901 (16·4), would be further reduced to 13·01 if the deaths of “visitors” were excluded. According to the Local Government Board tables these visitors must now be included in the death-rate of the town unless occurring in a public institution, and as 101 visitors died, 63 of whom had been resident less than one month, it will be seen that this new rule entails a considerable hardship on health resorts like Blackpool. The death-rate of the various wards was as follows:—Claremont, 9·82; Waterloo, 11·42; Brunswick, 12·23; Foxhall, 13·81; Bank Hey, 14·70; and Talbot, 15·42. The zymotic rate shows a very satisfactory reduction, and, with one exception (1892), is the lowest recorded during the preceding 10 years. The decrease as compared with last year (1·16 per 1,000) is due to fewer deaths from diarrhoea, diphtheria, scarlet fever, and whooping cough, the only increase being in measles. The figures for 1902 also show a very considerable improvement in the infant mortality, the rate being the lowest on record since 1887, and only two lower have ever been recorded, viz., 122 in 1879 and 116 in 1887. The epidemic of measles which commenced in November, 1901, continued into the spring of the year under report, the number of cases in January being 189, in February 148, March 108; the figures fell to 18 and 17 for May and June, and then in the autumn there was a rise to 144 in October, falling to 72 in November, and 44 in December. The total number of cases notified during the year was 863 in 544 houses, and 11 had a fatal termination. Dr. Coutts is of

opinion that the notification of this disease has been of decided benefit to the town, and he is convinced that it has helped to assure a much smaller death-rate by giving the officers of his department the opportunity of advising as to isolation and care of children attacked. In dealing with the outbreak 8 schools were closed. There were only 10 deaths from epidemic diarrhoea, as compared with 41 in 1901, 55 in 1900, 81 in 1899, and 101 in 1898. Owing to the cold summer the four-foot thermometer was only at 56° F. for about 8 weeks in the year, and 7 out of the 10 diarrhoea deaths occurring in the 15 weeks, including 3 weeks before the thermometer reached 56° and 4 weeks after. The extremely small mortality from zymotic enteritis is also attributed to the absence of hot weather. Whooping cough was the cause of 3 deaths. Two cases of small-pox were reported—1 in March and the other in October. The first case, a young man living at Levenshulme, but employed at Stalybridge, came to Blackpool on March 27th, and the rash appeared on the 30th; no definite history of contact with a small-pox case could be obtained. The patient was removed to the Old Sanatorium, and the usual precautionary measures were adopted. The second case was discovered on October 30th, in a doctor's surgery, where a man of the tramp class was found to be suffering from a fairly well-marked attack. He was detained until the ambulance could be brought, and removed direct to Elswick hospital. It was afterwards found that the man arrived in the town on the 9th or 10th, having slept the previous night in Kirkham Workhouse, so that he must have received the infection after his arrival in Blackpool, as the date of onset was October 26th. No trace of any contact could be found. All the inmates of the house in which he lodged were re-vaccinated, and thorough disinfection of the premises was carried out. Scarlet fever gave rise to 197 cases 5 deaths, against 271 cases 15 deaths in the previous year. The wards chiefly affected were Foxhall with 84 cases, Waterloo with 36, and Talbot with 29. Of the total cases notified 184, or 93·4 per cent., were removed

to hospital, the largest proportion ever recorded. Several cases were not discovered until after the desquamating stage was reached. In one instance a child had been ill a fortnight and attending school; 16 other cases were attributable to this oversight. A prosecution was instituted under Section 126 of "The Public Health Act, 1875," for exposing infected clothing: to avoid having the articles disinfected they were sent away from the house where scarlet fever had existed. Typhoid fever contributed 70 cases 13 deaths, as compared with 58 cases 16 deaths in 1901. Fifty-two of the cases were treated in the Sanatorium, or 71·7 per cent. of the total notifications.

Special inquiries were made into each of the typhoid fever cases, and Dr. Coutts reports that in 25 there was a definite history of the taking of shell-fish before the supposed date of onset. He is strongly of opinion that in a considerable number of these cases the attack was due to the ingestion of infected shell-fish. Owing to the almost universal method of sewage disposal, in vogue at our seaside towns, by turning crude sewage into the sea, it is certain that every opportunity is allowed for the pollution of shell-fish. If the specific organism of enteric fever happens to be present in the sewage, the shell-fish may become a serious source of danger, but even without that sewage microbes are probably responsible for some of the attacks of violent diarrhoea experienced after eating mussels or cockles. One case comes as near being a positive proof of typhoid fever from shell-fish as we are at all likely to get. The patient, a policeman, nine days before the onset of the disease, got some mussels from a man who had been seen to pick them from the sewer outfall pipe. He and a fellow-constable ate these mussels. His comrade had severe vomiting and purging, which possibly saved him from typhoid fever, but the patient in question had a very severe attack, his blood giving a very typical Widal reaction.

Dr. Coutts carefully picked six mussels from the sewer outfall near the spot where the others had been taken, washed them carefully in fresh water (town's supply) and sent them to Professor Delépine for bacteriological examination. He reported that although no typhoid germs were actually found within these particular mussels, they contained the bacillus coli communis, a distinct evidence of sewage contamination. I afterwards learned that some of the mussels contained small pieces of solid faecal material. This shows how great a danger there is in mussels growing in situations exposed to sewage pollution.

“The whole of the mussels were shortly afterwards stripped from the sewer outfall pipe by the sanitary department's workmen and destroyed.”

Diphtheria—associated with membranous croup—again had a somewhat extensive prevalence with 75 cases 18 deaths, against 131 cases 32 deaths in the previous year. Seventy-six specimens taken from the throats of suspected cases were sent for bacteriological examination, and the diphtheria bacilli was found in 28. The facilities granted by the Council for the free supply of antitoxin have been taken advantage of to a considerable extent. Erysipelas was responsible for 13 cases, puerperal fever 2 cases, and rōtheln 5 cases. The desirability of instituting a system of voluntary notification of phthisis is now under consideration. The Council offer to undertake disinfection after this disease, and in 19 instances such measures were carried out.

Hospital Accommodation.—The hospital was constructed for nominally 20 beds and 4 cots, but owing to the urgent necessity for isolation it has been frequently imperative to introduce more beds, and the wards have to that extent been overcrowded. The question of the provision of increased hospital accommodation has advanced only slowly, but full plans have now been prepared. The extensions proposed include a new administrative block, laundry, mortuary, and

disinfecting block, two large ward pavilions, an isolation block, and a discharge block. The total additional accommodation for patients will be 54. The temporary ward block at the joint hospital, Elswick, for the treatment of small-pox cases was opened on April 3rd. Altogether 273 persons received hospital isolation during the period under report, viz., small-pox 2, scarlet fever 184, typhoid fever 52, diphtheria 3, and measles 32. The average stay in hospital was 40·7 days, and the cost (excluding interest and sinking fund) was £1 2s. 0·7d. per week per patient.

Disinfection.—Houses are fumigated with sulphur or occasionally by formaldehyde vapour. Infected bedding, clothing, &c., undergo disinfection in the steam apparatus at the sanatorium, 43,586 articles being so disinfected during 1902. After measles sulphur fumigation of the patient's room is carried out.

Water Supply obtained from the Fylde Water Board; the water is soft and of a peaty nature, and occasionally contains a good deal of sediment which detracts from its appearance.

Sewerage, Scavenging, &c.—The borough is drained by five sewerage systems, four of which eventually discharge into the sea by an iron outfall pipe of 3 feet diameter, which has been carried 800 yards out to sea. The sewage is discharged only whilst the tide is receding, 1½ hours after high water, until 2 hours below low water, so as to insure all sewage being carried completely away. The fifth system drains the Claremont Park district, and the sewage flows by gravitation to an outfall extending 440 yards seawards. The abolition of the sewer ventilating grids in the streets is recommended, to be substituted by high ventilating shafts. Scavenging is carried out by the Authority. The water-carriage system of dealing with excreta is practically the only one in vogue, and a destructor is provided for dealing with

refuse. The few remaining privies are being abolished as rapidly as possible. A considerable number of streets and passages, which were in a bad condition, have received attention during the year.

Sanitary Inspection.—The magnitude of the sanitary work accomplished is shown by the undermentioned items, which are extracted from the report :—

Complaints received	288						
Total visits and inspection	10856						
Number of inspections of work in progress	2680						
Houses where sanitary defects were found	921						
Visits and re-inspections of houses, &c	3665						
Notices served for the abatement of nuisances	<table> <tr> <td>Council</td><td>386</td></tr> <tr> <td>Preliminary...</td><td>845</td></tr> <tr> <td>Verbal</td><td>109</td></tr> </table>	Council	386	Preliminary...	845	Verbal	109
Council	386						
Preliminary...	845						
Verbal	109						
Total number of house drains tested	2272						
Drains of new houses examined	271						
Number of sanitary defects remedied	1958						
Drains re-laid, disconnected, and ventilated	375						
Drains re-laid and cleaned out.....	260						
Drains tested during re-laying.....	924						
New w.c.'s erected in lieu of privies	43						
W.C.'s repaired or unblocked	216						
W.C. soil pipes ventilated.....	65						
Houses cleaned and limewashed.....	22						
Floors re-laid with flags or with cement concrete... [*]	100						
Back yards flagged, repaired, or concreted	310						
Accumulations of refuse removed	73						
Animals removed from improper situations	12						
Letters written	2436						

In addition 1,058 houses were disinfected after infectious disease, 1,164 isolation notices served upon householders, and 735 upon school managers. Lodging-houses received 713 inspections, dairies and cowsheds 685 inspections, and factories and workshops 392 inspections. The public abattoir and the

3 private slaughter-houses are well kept and properly cleaned; bakehouses are described as “fair.” Special attention has been given to the dairies and shippons; on inspection many of the latter were found in a very unsatisfactory condition. Notices were sent to the owners and occupiers together with a circular, drawn up by the Medical Officer of Health and the Veterinary Inspector, containing suggestions for their guidance in making the necessary alterations. As a result, in several instances very good work has been carried out. Samples taken under the Sale of Food and Drugs Acts amounted to 144, and 23 were reported as “not genuine.” A considerable amount of diseased or unsound food was seized and destroyed. Fourteen smoke observations were taken, one being followed by legal proceedings. Valuable meteorological statistics are appended to the report.

Blackrod.—(Area in acres, 2,392; Estimated Population, 3,900.)—*Medical Officer of Health*, J. W. UNSWORTH, M.B.; *Salary*, £20.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate.....	35·6	...	31·7	...	31·4
Death-rate	11·5	...	19·6	...	15·7
Zymotic death-rate.....	0·76	...	3·61	...	2·53
Phthisis ,,	0·25	...	nil.	...	0·48
Respiratory ,,	3·33	...	4·12	...	2·78
Rate of deaths under 1 year to 1,000 births	107	...	162	...	131

The statistics presented by Dr. Unsworth are marked by an increase in the birth-rate of 3·9 and a decrease in the death-rate of 8·1 per 1,000 of the population as compared with last year. The zymotic and infant rates also show very satisfactory reductions. Diarrhœa, scarlet fever, and typhoid fever each caused 1 death. Scarlet fever was rather prevalent over the whole of the township from January to September, 39 cases

being reported. Typhoid fever contributed 11 cases, diphtheria 8, erysipelas 5, and continued fever 2. The diphtheria cases occurred on the borders of Adlington, where there was a severe epidemic early in the year.

Hospital Accommodation.—The new joint hospital is in course of erection.

Disinfection.—No apparatus.

Water Supply abundant and excellent in quality.

Sewerage, Scavenging, &c.—The irrigation area at the sewage works is very large in proportion to the population it has to deal with, and absorbs the whole of the sewage. The Authority carry out scavenging in a satisfactory manner.

Sanitary Inspection.—The private bakehouses, slaughterhouses, and workshops appear to be well conducted. Dairies, cowsheds, and milkshops are in fairly good condition, but it is to be regretted that the Council has not yet adopted dairy, &c., regulations. Ninety-nine notices were served, and 76 nuisances abated.

Brierfield.—(Area in acres, 807; Estimated Population, 7,500.)—*Medical Officer of Health*, THOMAS DEAN, M.D.; *Salary*, £20 (no claim).

Per 1,000 of Population.	1902.		1901.		Mean of 4 years 1898-1901.
Birth-rate.....	24·4	...	27·1	...	27·1
Death-rate	13·0	...	15·2	...	14·0
Zymotic death-rate.....	2·40	...	2·36	...	2·03
Phthisis ,,	0·93	...	0·78	...	1·04
Respiratory ,,	2·80	...	2·76	...	2·58
Rate of deaths under 1 year to 1,000 births.....	136	...	194	...	171

With the exception of the zymotic and respiratory rates the mortality statistics compare favourably with the mean of

the 4 years 1898-1901. Measles—the cause of 11 deaths—was very prevalent during April and May, and in consequence three schools were closed for a fortnight. Whooping cough and diarrhoea each contributed 1 death. Small-pox broke out in April and caused 20 cases; the first case was introduced from a neighbouring district. Sixteen of the patients were removed to the small-pox hospital of the Burnley Corporation, and the remainder were treated at home. Notices advising vaccination and re-vaccination were posted throughout the district, and large numbers of the inhabitants submitted to the operation. Scarlet fever of a mild type gave rise to 60 cases 1 death, typhoid fever 5 cases, diphtheria 11 cases 4 deaths, and erysipelas 7 cases.

Hospital Accommodation.—Thirty-eight cases were isolated at the Burnley, &c., joint sanatorium, viz., small-pox 16, scarlet fever 18, and typhoid fever 4.

Disinfection.—Steam apparatus at Burnley is available.

Water Supply ample—obtained from Nelson.

Sewerage, Scavenging, &c.—The treatment at the sewage works consists of septic action in tanks, followed by double contact in bacterial filters. The Chief Inspector of the Ribble Joint Committee reports that “the results continue to be quite satisfactory.” Scavenging is efficiently performed by the Authority.

Sanitary Inspection.—Bakehouses and slaughter-houses are “well looked after,” and dairies and cowsheds are in fairly good condition. Unfortunately the latter are not subject to regulations. The factories and workshops inspected, with one exception, complied with the requirements, and the canal boats showed no contravention of the Act. The Inspector (Mr. Halstead) reports on 65 nuisances remedied after the service of 80 notices.

Carnforth.—(Area in acres, 1,505; Estimated Population, 3,050).—*Medical Officer of Health*, EDWARD S. JACKSON, M.D.; *Salary*, £20.

Per 1,000 of Population.	1902.	1901.	Mean of 7 years, 1895-1901.	
Birth-rate.....	25·5	30·2	..	29·6
Death-rate	12·1	10·8	...	11·9
Zymotic death-rate.....	0·32	1·31	...	0·68
Phthisis ,,	0·65	0·32	...	0·86
Respiratory ,,	1·96	1·97	...	2·04
Rate of deaths under 1 year to 1,000 births.....	128	86	...	96

The birth-rate is the lowest recorded during the last seven years. The death-rate, although fractionally above the average of previous years, is satisfactory, and the zymotic rate is wholly accounted for by 1 death from typhoid fever. Only 4 notifications were received, viz., typhoid fever 2, scarlet fever 1, and erysipelas 1.

Hospital Accommodation.—Nil.

Disinfection.—No proper appliances.

Water Supply described as “good.”

Sewerage, Scavenging, &c.—The sewage runs into a settling tank, the sludge being used for agricultural purposes, and the effluent is discharged into tidal waters. Scavenging as performed by contract gives satisfaction.

Sanitary Inspection.—Bakehouses and slaughter-houses are regularly inspected, and appear to be well kept. Regulations under the Dairies and Cowsheds Order have not yet been adopted. Canal boats gave rise to no complaints. The Inspector (Mr. Atkinson) secured the abatement of 60 nuisances after the issue of 31 notices.

Chadderton.—(Area in acres, 3,082 ; Estimated Population, 25,300).—*Medical Officer of Health*, HAROLD ASHTON, L.R.C.P.E. ; *Salary*, £65.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate	30·0	...	27·0	...	27·8
Death-rate	17·8	...	20·0	...	18·7
Zymotic death-rate.....	1·77	...	2·81	...	2·28
Phthisis ,, 	1·46	...	1·60	...	1·40
Respiratory ,, 	3·43	...	3·49	..	3·98
Rate of deaths under 1 year to 1,000 births	154	...	169	...	176

The birth-rate is the highest recorded during the past 10 years, and the general death-rate—with one exception—is the lowest. The zymotic rate and the proportion of infant deaths to births compare favourably with previous years. Measles and whooping cough were present in epidemic form in the autumn and winter, and caused 12 and 8 deaths respectively. Several schools had to be closed on account of these diseases. There was very little epidemic diarrhoea during the summer, only 2 deaths being due to this cause, and the deaths attributed to enteritis also were fewer than in previous years. Four cases of small-pox were notified during October and November ; the source of infection in 3 cases was traced to Oldham, where the patients worked, and the fourth case lived close to Royton, an infected district. All four cases were promptly removed to hospital, and nearly all the “ contacts ” were vaccinated or re-vaccinated. Early in the year, in view of a probable invasion of small-pox, the Council placed chicken-pox on the list of notifiable diseases for a period of 12 months ; 33 cases were notified. Scarlet fever again showed a reduction in the number of cases, 77 being reported with 4 deaths, against 112 cases 7 deaths in 1901. Diphtheria caused some trouble during the first five and the last two months of the year ; altogether 44 cases occurred, and no

less than 16 terminated fatally. Typhoid fever was responsible for 8 cases 3 deaths, erysipelas 3 cases, and puerperal fever 2 cases.

Hospital Accommodation is provided at the joint hospital at Cinder Hill for small-pox, and at the Westhulme hospital belonging to the Oldham Corporation for ordinary infectious diseases. Only 4 cases of scarlet fever were removed to the latter hospital.

Disinfection.—Steam appliances are provided at the joint small-pox hospital. No provision for the ordinary wants of the district.

Water Supply, obtained from the Oldham reservoirs, is on the whole satisfactory, although during the summer months numbers of animalculæ were observed in the Hollinwood supply.

Sewerage, Scavenging, &c.—Sewage is treated on the international system. The Mersey and Irwell Joint Committee have again drawn attention to the pollution which is caused by many of the manufacturers taking sewage into their mill lodges for condensing purposes, and afterwards emptying the lodges into the streams. Scavenging receives satisfactory attention from the Council's officials.

Sanitary Inspection.—Seven houses were condemned as unfit for human habitation, and 5 others closed until the necessary repairs were carried out. Bakehouses and slaughterhouses are described as "good," and dairies and cowsheds as "fair." The inspection of factories and workshops and canal boats did not reveal any contraventions of the respective Acts. By an Act of Parliament dated 22nd July, 1902, the District Council obtained powers "to order provision of or conversion into water-closets or waste-water closets." Only 28 notices were required for the abatement of nuisances. Smoke observations nil.

Childwall.—(Area in acres, 830 ; Estimated Population, 220.)

Medical Officer of Health, HENRY HARVEY, M.B.; *Salary* £20.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate	13·6	...	13·6	...	16·3
Death-rate	4·5	...	nil.	...	5·8
Zymotic death-rate.....	nil.	...	nil.	...	0·48
Phthisis ,, 	nil.	...	nil.	...	nil.
Respiratory ,, 	nil.	...	nil.	...	0·47
Rate of deaths under 1 year to 1,000 births.....	nil.	...	nil.	...	160

Three births and one death were registered in this district during the year, the latter being due to an accident. No case of notifiable infectious disease was reported, and there were, as far as could be ascertained, very few cases of sickness of any kind.

Hospital Accommodation.—A verbal agreement exists by which infectious cases can be removed to the Liverpool Corporation hospital. Dr. Harvey advises his Council to obtain a more binding arrangement.

Disinfection.—No apparatus. Clothing, &c., can be disinfected, if desired, at Liverpool.

Water Supply excellent, obtained from the waterworks of the Liverpool Corporation.

Sewerage, Scavenging, &c.—Sewage flows into cesspools situated in the fields ; the overflow—if any—percolates into a small stream. Scavenging is performed partly by the Authority and partly by householders.

Sanitary Inspection.—There are no bakehouses, lodging-houses, or slaughter-houses, and the only cowshed in the district is kept clean and fairly well ventilated. It was not necessary to issue any notices for the abatement of nuisances.

Chorley (Borough).—(Area in acres, 3,614; Estimated Population, 27,500.)—*Medical Officer of Health*, JAS. A. HARRIS, M.D. (Lond.); *Salary*, £60 (no claim).

Per 1,000 of Population.	1902.	1901.	Mean of 10 years, 1892-1901.
Birth-rate	28·7 ...	28·2 ...	31·6
Death-rate	17·0 ...	18·0 ...	21·1
Zymotic death-rate.....	1·41 ...	1·39 ...	2·26
Phthisis „	0·72 ...	0·96 ...	1·21
Respiratory „	4·25 ...	2·42 ...	3·85
Rate of deaths under 1 year to 1,000 births.....	155 ...	181 ...	195

The birth-rate is 2·9 per 1,000 below the mean of the preceding decade, and the death-rate is the lowest hitherto recorded for the Borough. There was a marked diminution in the infantile mortality, and the zymotic rate—although slightly higher than in 1901—compares favourably with the average of previous years. Measles was prevalent at the beginning of the year and gave rise to 13 deaths. To diarrhoea were ascribed 10 deaths and whooping cough caused 1 death. Small-pox for the first time since 1892 broke out; the first case was notified April 27th, and the patient, a vagrant at the workhouse, was at once removed to hospital. The second and third cases also occurred at the workhouse on July 29th and September 16th respectively. Unfortunately the latter case was not recognised for some time, and no less than 20 other cases arose from this source. Altogether 25 cases occurred and 4 deaths resulted; all the cases were, immediately on discovery, removed to hospital. It will be noticed that with few exceptions the cases were traced either directly or indirectly to vagrants, and Dr. Harris reports that he is of opinion “that all frequenters of casual wards ought to be compelled to undergo re-vaccination,” and, until such compulsion is legal, he believes that any attempt to stamp out small-pox is likely to prove a failure. Scarlet fever was prevalent throughout the year, but more especially in

February, March, and September. The total notifications numbered 156 and the deaths 8. Eighty-eight per cent. of the cases received hospital isolation; the percentage of deaths to reported cases of those removed to hospital was 3·6, and of the remainder treated at home 16·6. The number of typhoid fever cases—20 with three deaths—was the lowest for 10 years, and the decrease is largely attributed to the general adoption of the water-carriage system. Diphtheria gave rise to 6 cases and erysipelas 16 cases.

Hospital Accommodation.—One hundred and forty-four patients were removed to the joint hospital at Heath Charnock, viz., scarlet fever 138, typhoid fever 4, and diphtheria 2, and the 25 cases of small-pox were—by agreement—isolated in the Blackburn Corporation hospital at Finnington.

Disinfection.—The steam apparatus was used for the disinfection of 7,591 articles of bedding, clothing, &c., and 162 houses were fumigated.

Water Supply very good, obtained from the Liverpool Corporation.

Sewerage, Scavenging, &c.—The sewage works have been improved by the extension of the filter beds, and additional land has been purchased for irrigation purposes. The Cowling and Crosse Hall districts are still undrained, but a resolution has been passed that a loan of £4,440 be obtained for the purpose of sewerage and providing sewage works for these districts. Scavenging is efficiently performed by the Corporation. A refuse destructor will shortly be brought into operation.

Sanitary Inspection.—Bakehouses, lodging-houses, and slaughter-houses comply with sanitary requirements. Dairies, and cowsheds are generally in good condition. At the factories and workshops several improvements were recommended and carried out. Seventeen carcasses of animals were condemned

as unfit for human food, the total amount destroyed amounting to 4,681 lbs. The nuisance caused by the offensive smells from the oilcloth works has undoubtedly been mitigated, but the experiments carried out have not entirely obviated cause for complaint. The Inspector (Mr. Cunliffe) served 1,312 notices for the abatement of nuisances, and almost all have been complied with, but in 5 instances legal proceedings were necessary. Many smoke observations were taken, 28 resulting in legal action.

Church.—(Area in acres, 529 ; Estimated Population, 6,500.)

Medical Officer of Health, A. B. CRAIG, M.B. ; Salary, £30.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate	25·8	...	25·5	...	27·9
Death-rate	14·7	...	19·3	...	17·3
Zymotic death-rate	0·46	...	3·07	...	2·52
Phthisis ,,	1·07	...	1·69	...	1·09
Respiratory ,,	3·07	...	3·23	...	4·10
Rate of deaths under 1 year to 1,000 births	125	...	222	...	166

Dr. Craig presents mortality statistics which compare very favourably with those of 1901 ; the death-rate is reduced 4·6 per 1,000, the zymotic rate 2·61, and the infantile mortality is 125 against 222. The total absence of deaths from diarrhœa is mainly accountable for the great diminution in the infantile mortality ; this immunity was very probably due to the low temperature of the summer months. One death was ascribed to each of the following diseases—measles, whooping cough, and scarlet fever. Notifications received amounted to 43 as compared with 70 last year. Small-pox contributed 3 cases, scarlet fever 26, typhoid fever 7, diphtheria and membranous croup 2, erysipelas 4, and puerperal fever 1.

Hospital Accommodation nil. The 3 cases of small-pox were treated in the Blackburn Corporation hospital.

Disinfection.—A “disinfecting chamber” is provided at the gasworks.

Water Supply satisfactory both as regards quantity and quality obtained from the Accrington, &c., Joint Board.

Sewerage, Scavenging, &c.—Sewage is treated at the Accrington and Church joint outfall works at Coppy Clough. The Council’s workmen carry out scavenging in an efficient manner.

Sanitary Inspection. — Bakehouses, slaughter-houses, dairies, cowsheds, and milkshops are all described as being in satisfactory condition. Only one lodging-house is provided, and that has recently been condemned and closed. The inspection of factories and workshops revealed a few defects, and the same may be said of canal boats. Thirty privy-middens were abolished and water-closets substituted. The Inspector (Mr. Wood) served 119 notices for the abatement of a like number of nuisances. Thirty smoke observations were taken.

Clayton-le-Moors.—(Area in acres, 1,059; Estimated Population, 8,300).—*Medical Officer of Health*, L. TATTERSALL, M.R.C.S.; *Salary*, £30.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate	31·3	...	28·0	...	28·8
Death-rate	16·7	...	13·7	...	16·3
Zymotic death-rate.....	1·80	...	1·34	...	1·91
Phthisis ,, 	0·48	...	1·34	...	0·97
Respiratory ,, 	3·61	...	2·80	...	3·13
Rate of deaths under 1 year to 1,000 births	157	...	143	...	160

The mortality statistics for the year under review are not quite so favourable as those for last year, but they vary but little from the averages of the 10 years 1892-1901. Measles

did not give rise to a single death, but scarlet fever of a mild type was responsible for 59 cases 1 death. Diphtheria—associated with membranous croup—contributed 17 cases 8 deaths, typhoid fever 3 cases 1 death, whooping cough 4 cases, erysipelas 18 cases, and puerperal fever 2 cases.

Hospital Accommodation.—An arrangement has been made with the Accrington Corporation to admit any case of small-pox that may arise in this district into their hospital. No provision is made for ordinary infectious diseases.

Disinfection.—No apparatus.

Water Supply.—The quality of the water is more satisfactory than formerly. There is a freedom from vegetable growth, but the water still contains a certain amount of organic impurity.

Sewerage, Scavenging, &c.—The Ribble Joint Committee have called upon the Clayton-le-Moors and Great Harwood Joint Sewerage Board to adopt a definite scheme for improving the treatment of the sewage. The proposed method of purification has been laid before the Local Government Board. Scavenging is efficiently carried out by the Authority.

Sanitary Inspection.—Slaughter-houses are occasionally subjected to inspection; they are fairly well kept, but a public abattoir would be an improvement. A special examination of the dairies and cowsheds revealed many defects in drainage, and the air space was found to be insufficient. The present allotted space only averages about 350 cubic feet per cow. Dairy, &c., regulations are now under consideration. The general conditions of factories and workshops—with a few exceptions—may be regarded as satisfactory. Forty-one notices were issued for nuisance abatement, and all were complied with. Six smoke observations were taken.

Clitheroe (Borough).—(Area in acres, 2,385; Estimated Population, 11,450).—*Medical Officer of Health*, Wm. E. BARKER, M.B.; *Salary*, £40.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate	22·2	...	22·9	...	26·1
Death-rate	14·4	...	15·9	...	17·0
Zymotic death-rate.....	0·52	...	1·74	...	2·02
Phthisis „	0·87	...	0·78	...	1·10
Respiratory „	2·27	...	2·70	...	2·86
Rate of deaths under 1 year to 1,000 births	125	...	163	...	147

A low birth-rate is accompanied by a death-rate well below the average of previous years. The zymotic, phthisis, respiratory, and infant rates also compare favourably with the mean of the preceding decade. Measles, although only the cause of 1 death, appeared in epidemic form in the month of December, and school closure was found necessary. Diarrhoea contributed 2 fatalities. Scarlet fever was prevalent throughout the year, but it declined considerably during the last quarter; 57 cases were notified, and 2 deaths resulted. In the absence of hospital accommodation a difficulty is met with in adopting means for curtailing the spread of this disease. Only five other notifications were received, viz., typhoid fever 2, diphtheria 2 (1 fatal), and erysipelas 1. Dr. Barker recommends the voluntary notification of phthisis.

Hospital Accommodation.—There is no provision for the isolation of ordinary infectious diseases, but a small hospital (8 beds) is now being erected jointly by the Corporation and the Clitheroe and Bowland (Yorks) Rural District Councils for the treatment of small-pox cases.

Disinfection.—No apparatus. The provision of efficient disinfecting appliances is a “pressing need.”

Water Supply excellent.

Sewerage, Scavenging, &c.—The sewage works which were commenced in 1893 are not yet completed, but 82 per cent. of the houses are now permanently or temporarily connected with the main sewer. New tanks, which were brought into operation in September, have trebled the settling capacity. The Authority undertake the scavenging.

Sanitary Inspection.—The number of back-to-back houses and houses without back doors is still considerable, only 6 having been made into through houses during the year under report, thus leaving 286 of this class. Some of the streets in the older part of the town are in need of repair. The conversion of privy-middens is gradually taking place, only 42 of these now remaining. Bakehouses, lodging-houses, and slaughter-houses are generally satisfactory. Dairies and cowsheds—periodically visited—are kept clean, but some of the latter are structurally defective and badly ventilated. Factories and workshops were found in a cleanly state, and there appears to be an endeavour “to comply both with the spirit and the letter of the Act.” The Inspector (Mr. Davies) secured the abatement of 281 nuisances, served 32 notices, took several smoke observations, &c.

Colne (Borough).—(Area in acres, 5,063 ; Census Population, 23,000.)—*Medical Officer of Health*, W. LYONS LOVETT, L.R.C.P.E. ; *Salary*, £80.

Per 1,000 of Population.	1902.	1901.	Mean of 10 years, 1892-1901.
Birth-rate	26·7	27·3	29·6
Death-rate	15·9	14·3	15·7
Zymotic death-rate.....	2·73	1·43	2·24
Phthisis „	1·21	0·91	1·08
Respiratory „	3·34	2·91	3·82
Rate of deaths under 1 year to 1,000 births	188	170	166

The birth-rate was 2·9 per 1,000 of the population below

the average of the previous 10 years, but the death-rate showed a fractional increase. The zymotic rate and the proportion of infant deaths to births exceeded considerably the rates recorded in 1901, principally owing to the large number of deaths from measles. An epidemic of this disease broke out in the early part of February, and continued with more or less severity until September, causing altogether 38 deaths. Diarrhœa gave rise to 10 deaths and whooping cough 9. For the first time since 1894 small-pox broke out in the borough. The initial case was reported in March, and was at once removed to hospital. Stringent measures were taken to prevent further spread, vaccination and quarantine of the contacts being insisted upon, with the result that the disease did not spread. The district was then free from small-pox until October, when two cases were reported from separate parts of the borough, and in November cases occurred in a common lodging-house. In December a woman was found concealing a case of small-pox, and 18 other cases were traced to this source of infection. The offender was proceeded against, and fined 20s. and costs. During the whole year 28 cases were reported, all receiving hospital isolation. The number of cases of scarlet fever notified (127) greatly exceeded last year's notifications (39); four deaths resulted. Early in the year an epidemic of this disease occurred in Cottontree district traceable to a child who came to reside in the district whilst suffering from scarlet fever. This neighbourhood had been free from the disease for a long time, and there being a number of susceptible children, they readily became infected. Notifications were received concerning typhoid fever 7 cases (1 fatal), diphtheria 9 cases (1 fatal), erysipelas 20 cases, and puerperal fever 1 case. Eight cases of typhoid fever were bacteriologically examined, with the result that 4 gave positive reactions and 4 negative; two cases of suspected diphtheria were also tested and both proved negative.

Hospital Accommodation.—During the year a farm house

at Black Lane Ends was converted into a small-pox hospital, and the 28 cases reported above were successfully treated there. No provision has been made for ordinary infectious diseases.

Disinfection.—No apparatus. Houses are fumigated either with sulphur or formalin.

Water Supply ample and of good quality.

Sewerage, Scavenging, &c.—The consent of the Local Government Board has been obtained to borrow £11,000 for the extension of the sewers and sewage works. The sewerage is in connection with the Church Clough and Laneshaw districts and is well in hand. The scheme, as sanctioned, provides for the treatment of the whole of the sewage in open septic tanks followed by double contact in bacteria beds and final irrigation over land. Scavenging is carried out satisfactorily by the Corporation servants. The refuse destructor has proved of great value.

Sanitary Inspection.—Bakehouses, slaughter-houses, lodging-houses, houses let in lodgings, &c., receive periodical visits, and on the whole are well kept. Dairies and cowsheds—subject to regulations—show a slight improvement as regards cleansing and whitewashing. In February a Veterinary Inspector made an examination of the udders of all the cows in the Borough, and submitted a report thereon. A few notices were required to remedy defects in the sanitary condition of factories and workshops. Thirteen privy middens were abolished and water closets substituted. The Inspector (Mr. Sugden) reports on 139 nuisances dealt with, after the service of 145 notices. Several smoke observations were taken, and in some instances notices were served requiring the abatement of this nuisance.

Crompton.—(Area in acres, 2,865; Estimated Population, 13,500).—*Medical Officer of Health*, WILLIAM BROOKE, M.A., M.D.; *Salary*, £60.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years 1892-1901.
Birth-rate	27·7	...	26·3	...	26·7
Death-rate	18·7	...	16·9	...	18·3
Zymotic death-rate.....	0·81	...	1·19	...	1·67
Phthisis ,, 	0·96	...	0·59	...	1·18
Respiratory ,, 	3·92	...	3·05	...	3·85
Rate of deaths under 1 year to 1,000 births.....	192	...	118	...	181

As compared with last year the birth and death rates show increases equal to 1·4 and 1·8 per 1,000 of the population respectively. The zymotic rate is reduced 0·38, but there is a large increase in the proportion of infant deaths to births. Measles became epidemic in High Crompton during July, but fortunately only 3 deaths took place. With a view to limiting the spread of the disease the elementary schools were closed. Diarrhœa contributed 2 deaths and whooping cough 1 death. Twenty-eight cases of small-pox were reported, 2 of which proved fatal. The first outbreak of the disease came under observation on October 11th at a common lodging-house. The patient was a man employed on a “roundabout,” which was at the time working on the market place. He had, about a fortnight before, stayed at a lodging-house in Oldham from which several persons had been removed to hospital suffering from small-pox. From this case, directly or indirectly, all the cases occurring in Crompton could be traced. All the patients were removed to hospital, the infected houses, bedding, clothing, &c., were fumigated, handbills were distributed, and the majority of the schools were closed for about five weeks. Scarlet fever was responsible for 25 cases 2 deaths, typhoid fever 8 cases 1 death, erysipelas 11 cases, and puerperal fever 1 case.

Hospital Accommodation.—The joint small-pox hospital

at Cinder Hill was, as stated above, used for the isolation of 28 cases. No provision is made for ordinary infectious diseases.

Disinfection.—Meldrum's apparatus available. Rooms fumigated numbered 111.

Water Supply described as good.

Sewerage, Scavenging, &c.—Sewage is dealt with at two outfall works—Low Crompton and Newhey. On two occasions the Mersey and Irwell Joint Committee complained of the unsatisfactory character of the effluent. Scavenging is performed under the supervision of the Authority. A refuse destructor would prove of value.

Sanitary Inspection.—Several lots of old property require either being put into a proper state of repair or closing altogether. Bakehouses and slaughter-houses are well conducted, and dairies and cowsheds, on the whole, comply with sanitary requirements. Dairy, &c., regulations have not yet been adopted. Sixty-seven premises were inspected under the Factory and Workshop Act. The Inspector secured the abatement of 117 nuisances after the service of 56 notices. In one instance legal proceedings were necessary.

Croston.—(Area in acres, 2,347; Estimated Population, 2,120.)—*Medical Officer of Health*, ALFRED DUCKWORTH, L.R.C.P.E.; *Salary*, £20.

Per 1,000 of Population.	1902.	1901.	Mean of 10 years, 1892-1901.
Birth-rate	21·6 ...	24·2 ...	29·5
Death-rate	13·6 ...	10·9 ...	15·6
Zymotic death-rate.....	1·88 ...	0·47 ...	1·41
Phthisis ,,	0·47 ...	0·47 ...	0·55
Respiratory ,,	1·41 ...	1·90 ...	2·76
Rate of deaths under 1 year to 1,000 births.....	...	78 ...	144

The birth-rate shows a reduction of 7·9 per 1,000 as compared with the mean of the preceding decade, and the

death-rate is 2·0 below the average. The rate of infant deaths is exceptionally favourable, only one death taking place, and that from prematurity. Typhoid fever caused 5 cases 3 deaths, scarlet fever 2 cases 1 death, and diphtheria 1 case.

Hospital Accommodation.—Although the West Lancashire Rural District Council Hospital is available for cases from this district, the privilege was not taken advantage of during the year under review.

Disinfection.—No proper appliances.

Water Supply described as “fairly good.”

Sewerage, Scavenging, &c.—In the early part of the year new outfall works were completed, all the house connections made, and the system of pumping and treatment started. Scavenging is satisfactorily performed by the Authority.

Sanitary Inspection.—One house was condemned as unfit for human habitation. Bakehouses, slaughter-houses, and workshops, come under supervision, but little or no attention is given to dairies and cowsheds. The Inspector served 21 notices for the abatement of 27 nuisances.

Dalton-in-Furness.—(Area in acres, 7,990; Census Population, 13,020.)—*Medical Officer of Health*, G. H. PATTERSON, M.R.C.S., D.P.H.; *Salary*, £100.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate.....	31·3	...	31·7	...	30·3
Death-rate	17·6	...	17·2	...	15·5
Zymotic death-rate	0·53	...	1·30	...	1·85
Phthisis ,, 	1·45	...	1·30	...	1·05
Respiratory ,, 	3·22	...	2·99	...	2·86
Rate of deaths under 1 year to 1,000 births.....	156	...	166	...	143

The birth and death rates vary but fractionally from those

of 1901, but the zymotic and infant rates show satisfactory reductions. The death-rate varied from 17·2 in the Dalton sub-district to 21·2 in the Lindal sub-district. Measles caused only 1 death, but a slight epidemic in July necessitated the closure of Ireleth schools for a short period. Diarrhœa did not give rise to a single fatality; whooping-cough contributed 3 deaths. An epidemic of scarlet fever of a mild type prevailed throughout the district, causing 83 cases and 1 death. Typhoid fever was responsible for 7 cases, diphtheria 8 cases (2 fatal), and erysipelas 17 cases.

Hospital Accommodation.—The joint sanatorium at High Carley was used for the isolation of 19 patients, 16 suffering from scarlet fever, and 3 from typhoid fever.

Disinfection.—No apparatus.

Water Supply.—The area within the radius of the mains is provided with an adequate supply of undoubted purity, but the outlying parts are practically dependent upon stored rain-water. The Council might, with advantage, give this important matter their careful consideration.

Sewerage, Scavenging, &c.—Sewage is discharged into the sea, after subsidence in tanks. The conditions at the outfall of the Newton sewer—complained of last year—remain much the same. Several lengths of sewers have been laid during the year, and new sewer ventilators were provided in four places. The Authority undertake scavenging.

Sanitary Inspection.—Bakehouses and slaughter-houses are described as “fair,” and dairies and cowsheds “only moderate.” One slaughter-house, in Tudor Square, is most unsatisfactory, both as regards its position and structural condition, and Dr. Patterson would like the Council to take some decided action in the matter. The common lodging-house “is a source of perennial trouble,” and it is hoped that the time is not far distant when the establishment will be

placed under better management, or entirely closed. The factories and workshops are kept in "fair order." Fifty-nine privy middens were, during the year, converted to water closets. The Inspector (Mr. Procter) reports on 137 notices relating to nuisances on 170 premises.

Darwen (Borough).—(Area in acres, 5,959 ; Estimated Population, 38,712).—*Medical Officer of Health*, F. G. HAWORTH, M.B., D.P.H. ; *Salary*, £200.

Per 1,000 of Population.	1902.	1901.	Mean of 10 years, 1892-1901.
Birth-rate.....	23·0 ...	22·4 ...	27·9
Death-rate	14·6 ...	16·2 ...	17·3
Zymotic death-rate.....	1·54 ..	2·30 ...	2·06
Phthisis ,,	0·80 ...	0·75 ...	0·89
Respiratory ,,	3·25 ...	3·61 ...	3·86
Rate of deaths under 1 year to 1,000 births.....	151 ...	168 ...	172

The birth-rate is fractionally higher than in 1901, but with that exception it is the lowest recorded during the last 21 years. The decline in the general death-rate also continues, the rate for the year under report being the lowest recorded since 1882. The zymotic and infant rates show favourable reductions. Statistics are again given as to deaths in regard to occupation, with a view of demonstrating the particular diseases to which certain workers are liable, and so enabling action to be taken to avert the dangers of such occupation. Whooping cough, diarrhoea, and measles caused 9, 7, and 5 deaths respectively ; in dealing with the latter disease school closure was resorted to. Small-pox gave rise to 3 cases, which were removed to hospital. These all occurred in one house, the disease being contracted in Blackburn. For some years this borough has suffered from severe epidemics of scarlet fever, but there are signs that the disease has nearly exhausted itself. During the year under review 137 cases were reported,

against 231 in 1901, 277 in 1900, and 400 in 1899; the fatalities in these years numbered 9, 14, 11, and 22 respectively. Diphtheria also appears to be on the decline, 144 cases with 21 deaths occurring during 1902, as compared with 207 cases 35 deaths last year, and 190 cases 45 deaths in 1900. Typhoid fever was the cause of 34 cases 8 deaths, erysipelas 15 cases, puerperal fever 3 cases, and continued fever 1 case (fatal).

Hospital Accommodation is provided at Bull Hill, and consists of 20 beds and 4 cots. Thirty-one cases were isolated here, viz., small-pox 3, scarlet fever 26, typhoid fever 1, and diphtheria 1.

Disinfection.—Houses are disinfected with sulphur and equifex spray. Bedding, articles of clothing, &c., are taken to the steam apparatus at the hospital.

Water Supply is ample and of satisfactory character.

Sewerage, Scavenging, &c.—Sewage undergoes treatment at two outfall works. Scavenging, in the hands of the Corporation, is satisfactorily performed. Over 10,000 tons of refuse were burnt in the destructor.

Sanitary Inspection.—The Insanitary Dwellings Sub-Committee visited several blocks of property, and in some instances gave orders for notices to be served to remedy insanitary conditions. One house was condemned and closed. Bakehouses are well looked after and kept clean, and the slaughter-houses have been carried on satisfactorily few complaints having been made. The whole of the farms were inspected during the year, and great improvements made with respect to light and ventilation; a number of nuisances were found to exist, chiefly defects of closets, drains, and roofs. A special Sub-Committee was appointed to carry out the Factory and Workshops Act as far as regards the sanitary conveniences, and the following recommendations were adopted:—

(a) “All closets on the pail system shall be converted to the latrine system.

(b) “That no closet on either pail or latrine system be allowed within a space of six feet from the mill wall, and that this space be kept open to the sky so as to effectually disconnect the closet from the workroom.

(c) “That in the case of closets on upper floors, these shall be dispensed with as far as possible; but where permitted, such permission shall be granted only on the condition of each closet being fixed separately, on the most approved principle, in a separate ventilated apartment which shall be cut off from the workroom by a sufficiently ventilated vestibule or lobby; all to be against external walls, and with external soil-pipes.”

Mr. Marsden, the Chief Inspector, reports on the inspection of 5,057 houses, during which 1,415 nuisances were discovered; as a result of 1,285 notices 1,337 of the nuisances were abated. In 3 instances legal proceedings were instituted, and the fines inflicted, exclusive of costs, amounted to £40. Only 16 smoke observations were taken, against 129 last year.

Denton.—(Area in acres, 2,594; Estimated Population, 15,186.)—*Medical Officer of Health*, F. W. ALLKIN, M.B.; *Salary*, £40 (no claim).

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate.....	27·7	...	23·1	...	26·7
Death-rate	15·9	...	16·7	...	18·1
Zymotic death-rate	2·17	...	1·00	...	1·60
Phthisis ,,	1·05	...	1·73	...	1·40
Respiratory ,,	2·69	...	2·20	...	3·09
Rate of deaths under 1 year to 1,000 births.....	158	...	160	...	184

The birth-rate is above the average, but the death-rate,

with one exception (1898), is the lowest recorded during the 10 years 1892-1901. The zymotic rate showed an advance, but the proportion of infant deaths to births compares very favourably with previous years. This latter rate might, in the opinion of Dr. Allkin, be further reduced by regular and judicious feeding of infants, with more attention to cleanliness, and suitable clothing. An epidemic of measles occurred in the first four months of the year, and it was found necessary to close several schools. Eleven deaths were ascribed to this disease, 3 to whooping cough, and 6 to diarrhoea. Scarlet fever contributed the same number of cases as last year, viz., 91, but 6 deaths resulted against none in 1901. Typhoid fever caused 20 cases 6 deaths, diphtheria—associated with membranous croup—12 cases one death, erysipelas 21 cases, and typhus, puerperal, and relapsing fevers 1 case each. Arrangements have been made for bacteriological examinations in cases of diphtheria and typhoid fever.

Hospital Accommodation.—Two beds are reserved at the Hyde Corporation hospital for the use of this district, but only 1 case (diphtheria) was removed during the year.

Disinfection.—No apparatus. The provision of efficient appliances is strongly urged. Houses fumigated numbered 107.

Water Supply good, obtained from Manchester.

Sewerage, Scavenging, &c.—Sewage is treated by precipitation and filtration. Scavenging receives attention from the Council's own staff.

Sanitary Inspection.—Bakehouses, slaughter-houses, factories, workshops, dairies, and cowsheds are regularly inspected, and, on the whole, comply with sanitary requirements. The Inspector (Mr. Newton) reports that he served 76 notices for nuisance abatement, and that nearly all were complied with. In one instance legal proceedings followed.

Droylsden.—(Area in acres, 1,010 ; Estimated Population, 11,200.)—*Medical Officer of Health*, ANDREW GELLATLY, M.B. ; *Salary*, £25 (no claim).

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate.....	32·0	...	28·4	...	30·5
Death-rate	17·3	...	16·7	...	18·0
Zymotic death-rate.....	2·67	...	2·97	...	2·38
Phthisis ,,	0·71	...	0·54	...	1·01
Respiratory ,,	4·01	...	3·42	...	4·14
Rate of deaths under 1 year to 1,000 births.....	164	...	151	...	171

The health report for this district was not received by the County Council until the 10th of August, 1903. As compared with the previous year, the birth and death rates show increases of 3·6 and 0·6 per 1,000 of the population respectively. The zymotic rate is reduced 0·30, but the phthisis, respiratory, and infant rates are less favourable. Measles prevailed epidemically, and caused 19 deaths. The Order placing measles on the list of notifiable diseases expired at the end of June, and, as the Medical Officer of Health reported that owing to the benefit derived from notification of measles being so limited, he did not advise the Council to renew the Order, compulsory notification ceased. Prior to the date mentioned 505 cases had been reported, and on account of the great prevalence amongst the children attending St. Mary's and the Castle Infant schools closure was resorted to. Diarrhœa gave rise to 4 deaths, diphtheria 6 deaths, and typhoid fever 1 death. Two cases of small-pox were notified—one in October and the other in December. The infection in the first case was very probably obtained in Oldham, and the second case was contracted from a fellow-workman in Stockport. Both cases were removed to the Hyde hospital, the bedding destroyed, and the houses thoroughly disinfected. The inmates of the infected premises were all re-vaccinated and

quarantined for about three weeks. Scarlet fever was responsible for 58 attacks, none fatal, diphtheria and membranous croup 22, typhoid fever 12, and erysipelas 8. "The Infectious Diseases (Prevention) Act, 1890," was adopted, and came into operation on the 29th December, 1902.

Hospital Accommodation.—Two beds are reserved at the Hyde Corporation hospital for the use of this district, at a fee of £22 per annum. As stated above, the 2 cases of small-pox were removed to this hospital.

Disinfection is carried out by formaldehyde gas.

Water Supply.—No information.

Sewerage, Scavenging, &c.—The Mersey and Irwell Joint Committee were not satisfied with the method of sewage disposal, and in November legal proceedings were instituted, which resulted in fines of £50 and costs. Scavenging is carried out under the supervision of the Nuisance Inspector. The necessity of the provision of a refuse destructor is again referred to.

Sanitary Inspection.—Six cottages were demolished as unfit for human habitation. The sanitary condition of dairies and cowsheds has received the attention of the Committee, who have personally visited each of the 31 shippons; in 15, serious defects were discovered, such as insufficient air space, ventilation or light, defective drainage, or unsatisfactory water supply, and on two premises such conditions were found as to justify their discontinuation as cowsheds. Regulations under the Cowsheds Order of 1885 came into operation in September. Bye-laws relating to slaughter-houses are awaiting the approval of the Local Government Board, and when such sanction is obtained immediate steps will be taken to improve the buildings, which at present leave much to be desired. The Inspector (Mr. Hall) reports on nuisances dealt with on 212 premises. Twenty-seven privies and ashpits were abolished

and replaced by water-closets. “Many” smoke observations have been taken. Form C was not supplied.

Eccles (Borough).—(Area in acres, 2,057 ; Estimated Population, 35,000.)—*Medical Officer of Health*, W. M. HAMILTON, M.D., D.P.H. ; *Salary*, £150 (no claim).

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate.....	27·1	...	26·9	...	26·9
Death-rate	15·8	...	16·6	...	16·4
Zymotic death-rate.....	2·25	...	2·72	...	2·55
Phthisis ,,	0·82	...	1·24	...	1·36
Respiratory ,,	2·57	...	2·72	...	2·81
Rate of deaths under 1 year to 1,000 births.....	112	...	164	...	165

The birth-rate is higher than for some years, while the death-rate—with two exceptions—is the lowest recorded during the 10 years 1892-1901. The former rate varies from 16·2 in the Monton and Park Ward to 34·4 in the Winton Ward, and the latter from 11·1 in the Monton and Park Ward to 20·7 in the Irwell Ward. The zymotic, phthisis, respiratory, and infant rates are below the mean of the preceding decade, the latter mortality being the lowest recorded during that period. Dr. Hamilton says “as fully 80 per cent. of the deaths of infants are caused by improper feeding,” the Health Committee decided to issue and circulate a leaflet giving instructions as to the feeding and general care of young children. Measles gave rise to 11 deaths ; 398 cases of this disease were notified by the teachers of the public schools, the greatest prevalence being in January and February, when it was necessary to close two schools. Whooping cough also had an extensive spread, 281 cases coming to the knowledge of the Authority. Twenty-four deaths were due to this disease. Diarrhœa contributed 8 deaths. Four hundred and four cases were reported under the Infectious Disease (Notification) Act,

against 294 last year, 441 in 1900, and 359 in 1899. Four cases of small-pox occurred in December, all vagrants, and as far as could be ascertained there was no connection between the cases. The first case was discovered in the tramp ward of the Patricroft Workhouse on December 2nd; all contacts were quarantined for 14 days, and re-vaccinated. The second and third cases also occurred at the workhouse, and the fourth was found in a common lodging-house. All the cases were promptly removed to the Salford small-pox hospital. Scarlet fever was responsible for 191 cases 11 deaths; several attacks were so mild that they were not recognised until the stage of desquamation was reached, and these, no doubt, contributed to the spread of the disease. In one instance legal proceedings were successfully instituted for gross carelessness on the part of the parents in not notifying the occurrence of scarlet fever. Diphtheria also had a wide spread, 108 cases being reported, 21 of which terminated fatally. The greatest prevalence was attained towards the end of the year, when, to cope with the outbreak, school closure was resorted to. Forty-eight throat swabs were taken for bacteriological examination. Typhoid fever was the cause of 33 cases 4 deaths, erysipelas 33 cases, puerperal fever 5 cases, and chicken-pox 30 cases; owing to the imminence of small-pox, the latter disease was made notifiable for six months from April 14th, and was again placed on the list in December. One hundred and sixty-one cases of chicken-pox were notified from the schools, in addition to the 30 reported by medical practitioners. Arrangements have been made for the voluntary notification of phthisis, but the Medical Officer of Health regrets that the medical men do not render much assistance in this matter.

Hospital Accommodation is provided at the Ladywell sanatorium, belonging to the Salford Corporation. Altogether 197 cases were removed, or 48·7 per cent. of the total notifications, viz., small-pox 4, scarlet fever 99 (52 per cent. of total cases), typhoid fever 16 (48 per cent.) diphtheria 73 (67 per cent.), erysipelas 4, and puerperal fever 1.

Disinfection.—Five schools and 444 rooms were disinfected by sulphur dioxide, the walls and floors being previously sprayed with a solution of corrosive sublimate. The bedding and infected clothing were treated in the steam apparatus at the hospital.

Water Supply excellent; obtained from Manchester.

Sewerage, Scavenging, &c.—Sewage is treated on land under a dual system, viz., broad irrigation and intermittent downward filtration. Four acres of bacteria beds are now being laid out. The flow of sewage in fine weather amounts to 1,412,500 gallons daily; the whole of the sludge is utilised as manure upon the farm. Scavenging is performed in a satisfactory manner, under the supervision of the Council's officials. A refuse destructor will shortly be erected.

Sanitary Inspection.—The Chief Inspector (Mr. Laskey) reports upon a large amount of work carried out in his department, including 2,461 nuisances abated, 4,714 re-inspections of nuisances, 2,391 inspections of dwellings, 73 visits to slaughter-houses, 139 to dairies and cowsheds, 174 to common lodging-houses, 144 to bakehouses, 235 to workshops, &c.; 117 to van dwellings, and 61 to canal boats. A difficulty was experienced in persuading cowkeepers to provide proper ventilation in their shippens, and in dealing with slaughter-houses the points to which most exception had to be taken were the infrequent removal of offal and its temporary storage in absorbent receptacles. The use of two slaughter-houses was entirely discontinued. The smoke test was applied to 336 drains, and 241 were subsequently opened for inspection. One hundred and sixty-five privy middens were either converted to water closets or abolished. A scheme for dealing with an insanitary area under Part II. of "The Housing of the Working Classes Act," received the sanction of the Local Government Board, and 29 houses were demolished. Smoke observations numbered 24, one being followed by legal proceedings, when a fine was inflicted and an Order to abate granted.

Failsworth.—(Area in acres, 1,072 ; Estimated Population, 14,250).—*Medical Officer of Health*, G. W. BEATTIE, M.D. ; *Salary*, £50.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate.....	29·2	...	30·5	...	32·1
Death-rate	17·0	...	18·1	...	18·4
Zymotic death-rate.....	1·82	...	2·68	...	2·22
Phthisis ,,	1·19	...	1·20	...	1·49
Respiratory ,,	2·73	...	2·89	...	3·55
Rate of deaths under 1 year to 1,000 births.....	163	...	155	...	170

With the exception of the infantile death-rate, the mortality statistics compare favourably with those recorded last year, and all the rates are below the averages of the 10 years 1892-1901. Diarrhoea and whooping cough each contributed 9 deaths, but only 1 death was ascribed to measles. Small-pox gave rise to six cases in December ; all were promptly removed to hospital. Scarlet fever, generally of a mild type, was the cause of 66 cases (3 fatal), typhoid fever contributed 5 cases 2 deaths, diphtheria—associated with membranous croup—10 cases 2 deaths, erysipelas 9 cases, and continued fever 2 cases.

Hospital Accommodation.—Sixteen cases, viz., scarlet fever 9, small-pox 6, and typhoid fever 1, were removed to the Oldham Corporation hospital, and 1 case of scarlet fever was removed to the Monsall hospital (Manchester).

Disinfection.—No special appliances provided ; formalin and sulphur fumigation is relied on.

Water Supply, obtained from Oldham, is sufficient in quantity and of good quality.

Sewerage, Scavenging, &c.—Improvements have recently been made at the outfall works, and an additional five acres of

land has been secured for filtration purposes. Scavenging is carried out by the Authority. A difficulty is met with in disposing of the refuse. A destructor would solve the problem.

Sanitary Inspection.—Eighteen houses were reported as unfit for human habitation; five have since been demolished, three others are being closed, and it is intended to put the remainder in a proper state of repair. Bakehouses and slaughter-houses are well kept, and dairies and cowsheds are clean, but not otherwise in accordance with the regulations. Factories and workshops are in “fair order,” and the canal boats passing through the district gave rise to no complaints. Eighty-seven privy or pail closets were abolished, and the water-carriage system substituted. The Inspector (Mr. Wharton) secured the abatement of 290 nuisances, after the service of 104 notices. Twenty-two smoke observations were taken.

Farnworth.—(Area in acres, 1,504; Estimated Population, 26,000).—*Medical Officer of Health*, A. KERSHAW, M.D.; *Salary*, £40 (no claim).

Per 1,000 of Population.	1902.	1901.	Mean of 10 years, 1892-1901.
Birth-rate.....	28·5 ...	28·6 ...	31·6
Death-rate	16·7 ...	19·0 ...	20·2
* Zymotic death-rate.....	2·23 ...	3·61 ...	2·80
Phthisis ,,	1·07 ...	0·80 ...	1·19
Respiratory ,,	2·73 ...	3·19 ...	3·67
Rate of deaths under 1 year to 1,000 births.....	200 ...	223 ...	222

A gratifying improvement is shown in the mortality statistics as compared with last year, and with the mean of the preceding decade; but the zymotic rate and the proportion of infant deaths to births are still high, and cannot be considered satisfactory. To the want of proper feeding and nursing is attributed the heavy infantile mortality. Measles—

the cause of 15 deaths—prevailed at various times during the year, and it was found necessary to close three schools. Diarrhœa gave rise to 18 fatalities and whooping cough 2. Thirteen cases of small-pox (2 fatal) occurred during the later months of the year; the district being unprovided with hospital accommodation for this disease, necessitated an appeal to Salford, the first three cases being sent there. The Council then erected a temporary hospital at Darley, where the remaining 10 cases were treated. Scarlet fever again had an extensive prevalence, causing 208 cases 10 deaths, against 196 cases 9 deaths in 1901. Dr. Kershaw is of opinion that the disease is often spread by unrecognised cases of mild type attending school. Hospital isolation was resorted to in 88 per cent. of the total cases. A decrease in the number of typhoid fever cases—19 with 5 deaths, against 51 cases 9 deaths last year—is attributed to the improved condition of back yards and the abolition of many privy middens. Diphtheria—associated with membranous croup—was responsible for 21 cases 6 deaths, erysipelas 14 cases, and puerperal fever 1 case.

Hospital Accommodation.—The total cases treated in hospital amounted to 213 :—scarlet fever 184, typhoid fever 11, and diphtheria 5, being removed to the joint hospital, and 13 cases of small-pox isolated as above stated.

Disinfection.—Steam apparatus is available.

Water Supply “good,” from Bolton Corporation.

Sewerage, Scavenging, &c.—Sewage is treated by precipitation and filtration. On three occasions the Mersey and Irwell Joint Committee drew attention to unsatisfactory effluents. The Council undertake the scavenging.

Sanitary Inspection. — Bakehouses, slaughter-houses, lodging-houses, and dairies and cowsheds are under regular supervision, and the Medical Officer of Health reports that “he can honestly compliment the Sanitary Committee on the

exceedingly good sanitary work done during the year." Improvements in the closet accommodation have been carried out at several of the factories and workshops. Nuisances abated amounted to 1,271, notices served 128, smoke observations taken 61, legal proceedings instituted 4, &c.

Fleetwood.—(Area in acres, 2,510; Estimated Population, 13,000).—*Medical Officer of Health*, JOHN D. FAUSSET, B.A., M.D.; *Salary*, £80 (including £20 for the Port).

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate.....	32·7	...	29·1	...	31·7
Death-rate ..	15·0	...	14·1	...	15·3
Zymotic death-rate.....	1·30	...	1·38	...	2·02
Phthisis ,,	0·92	...	0·32	...	0·90
Respiratory ,,	1·69	...	2·93	...	2·69
Rate of deaths under 1 year to 1,000 births.....	105	...	131	...	149

The birth and death rates show increases of 3·6 and 0·9 per 1,000 of the population respectively as compared with the previous year; the zymotic rate, however, shows a fractional reduction, and the respiratory rate and the proportion of deaths under 1 year to 1,000 births are more favourable. Measles did not give rise to a single death, but whooping cough caused 1 death, and diarrhoea 3 deaths. Scarlet fever prevailed throughout the year, 187 cases being notified, 10 of which proved fatal. Dr. Fausset attributes much of the spread of this disease to the fact that patients exposed themselves in the streets and other public places before they were free from infection. Apart from scarlet fever, there was very little infectious disease, typhoid fever causing only 4 cases 1 death, diphtheria 2 cases (both fatal), and erysipelas 5 cases.

Hospital Accommodation.—The new joint hospital at Moss Side was opened on April 14th, 1902. Five cases of scarlet

fever were removed from this district. Provision now exists at Elswick for any small-pox case that may arise.

Disinfection.—Steam apparatus provided. Houses fumigated numbered 161.

Water Supply good, obtained from the Fylde Water Board's reservoir at Grizedale.

Sewerage, Scavenging, &c.—Sewage is still discharged into the harbour, but an Act has recently been obtained giving powers to deal with the whole of the sewage and remove the existing sewer outlets. Scavenging is efficiently performed by the Council's employees, the refuse being burnt in the destructor.

Sanitary Inspection.—Bakehouses, lodging-houses, slaughter-houses, and dairies and cowsheds are inspected monthly, and, on the whole, are in a fairly satisfactory condition. Legal proceedings were successfully instituted against four lodging-house keepers for overcrowding. "The privy and ashpit nuisance has disappeared, water-closets in every case have been substituted, and also provided at all new houses." The Inspector (Mr. Gaulter) served 1,136 notices for the abatement of nuisances discovered during the inspection of 2,197 premises. In eight instances legal proceedings were taken, and a conviction obtained in each case. Smoke observations are taken daily.

The Port Sanitary Authority.—No case of infectious disease has occurred on any vessel arriving at the Port. The hospital is kept in readiness for the admission of patients, but it has not been required since 1894. The Inspector examined 127 vessels, and in addition made 124 re-examinations. In a few instances verbal orders were given for sanitary improvements, and these were in all cases complied with.

Fulwood.—(Area in acres, 2,116; Estimated Population, excluding Public Institutions, 2,932).—*Medical Officer of Health*, JOHN GARTH, L.R.C.P.I.; *Salary*, £30.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate.....	19·0	...	21·9	...	23·3
Death-rate	14·3	...	11·4	...	12·8
Zymotic death-rate.....	0·34	...	0·34	...	0·62
Phthisis ,, 	0·34	...	Nil.	...	0·70
Respiratory ,, 	2·72	...	1·04	...	2·29
Rate of deaths under 1 year to 1,000 births.....	107	...	63	...	89

The population of the public institutions in this district, namely :—workhouse, barracks, orphanage, convent, &c.—is estimated at 2,438, and in calculating the various averages, the deaths in these places (172) are excluded. The birth-rate shows a decrease of 2·9 and the death-rate an increase of 2·9 per 1,000 as compared with last year. The zymotic rate—due to 1 death from measles—remains the same, but the rate of deaths under 1 year to 1,000 births is considerably higher. In the district proper only 10 cases of infectious disease were notified, viz., scarlet fever 6, diphtheria 3, and erysipelas 1. As a precautionary measure one school was closed on account of the presence of scarlet fever. In the institutions—principally the workhouse—12 cases occurred as follows : small-pox 1, typhoid fever 1, diphtheria 1, and erysipelas 9.

Hospital Accommodation.—The case of small-pox which occurred in the workhouse was removed to the temporary pavilion erected at Elswick by the Joint Small-pox Hospital Committee. Building operations at the Preston (R.), Fulwood, and Longridge joint hospital (for ordinary infectious cases) have now been commenced.

Disinfection.—No apparatus.

Water Supply described as “good.”

Sewerage, Scavenging, &c.—The sewerage of the district and formation of new sewage works are approaching completion. The sewage will pass through detritus chambers into two open septic tanks; it will then be sprinkled automatically over filters, and receive final treatment on land. The Sanitary Authority undertakes scavenging.

Sanitary Inspection.—The only slaughter-house in the district is well kept, and the dairies and cowsheds—inspected occasionally—are in fairly good condition. It was not found necessary to serve any notices as all the nuisances discovered were abated on the verbal instructions of the Inspector (Mr. Naylor). Frequent smoke observations were taken.

Garston.—(Area in acres, 1,673; Estimated Population, 19,100).—*Medical Officer of Health*, J. A. FISHER, L.R.C.P.E.; *Salary*, £110.

Per 1,000 of Population.	To 8th November, 1902.		1901.	Mean of 10 years 1892-1901.	
Birth-rate.....	32·7	...	29·8	...	31·9
Death-rate	11·6	...	16·1	...	15·3
Zymotic death-rate.....	1·40	...	2·87	...	2·52
Phthisis ,, 	0·73	...	0·47	...	0·70
Respiratory ,, 	2·26	...	3·61	...	3·40
Rate of deaths under 1 year to 1,000 births.....	108	...	185	...	166

By the extension of the boundaries of the City of Liverpool, on the 9th November, 1902, this district ceased to form part of the Administrative County. The Medical Officer of Health has not prepared a report, but the mortality statistics for the period prior to incorporation are available. From these it will be seen that the death-rates compared very favourably with the average of previous years. The zymotic rate (1·40) was accounted for by diarrhoea 12 deaths, diphtheria 8 deaths, whooping cough 2 deaths, and measles 1 death. One hundred

and seventy-four cases of infectious disease were notified in the ten months, viz., small-pox 1, scarlet fever 83, typhoid fever 32, diphtheria—associated with membranous croup—31, erysipelas 25, continued fever 1, and puerperal fever 1.

Golborne.—(Area in acres, 1,679; Estimated Population, 7,000).—*Medical Officer of Health*, JAMES DOBB, L.R.C.P.; *Salary*, £30.

Per 1,000 of Population.	1902.	1901.	Mean of 7 years 1895-1901.
Birth-rate.....	38·1 ...	33·0 ...	34·1
Death-rate	18·8 ...	14·7 ...	17·5
Zymotic death-rate.....	1·85 ...	3·28 ...	2·42
Phthisis ,,	0·85 ...	0·14 ...	0·53
Respiratory ,,	2·57 ...	3·14 ...	3·23
Rate of deaths under 1 year to 1,000 births.....	112 ...	164 ...	175

An increase in the birth-rate of 5·1 per 1,000 as compared with last year, is accompanied by an increase in the general death-rate equal to 4·1, but the zymotic rate and the proportion of infant deaths to births show satisfactory reductions. Three deaths were ascribed to measles, 2 to diarrhoea, and 1 death to whooping cough. There was an increase in the notifications received, viz., 52 against 7 in 1901. Scarlet fever contributed 25 cases with 1 death, diphtheria 15 cases 6 deaths, erysipelas 11 cases, and continued fever 1 case.

Hospital Accommodation.—The joint hospital at Astley is available, but only 1 case (scarlet fever) was removed during the year.

Disinfection.—No appliances.

Water Supply is obtained from the Ince Urban Council's reservoirs situate in this district.

Sewerage, Scavenging, &c.—The bacteria beds at the

sewage works are said to be giving “satisfactory results.” The District Council perform the scavenging.

Sanitary Inspection. — Bakehouses, lodging-houses, slaughter-houses, dairies, and cowsheds were regularly inspected, and on the whole appeared to be in good sanitary condition. Factories and workshops complied with the Act. The Inspector served 73 notices and secured the abatement of 65 nuisances. One smoke observation is reported upon.

Gorton. — (Area in acres, 1,147; Estimated Population, 27,500).—*Medical Officer of Health*, A. W. MARTIN, L.R.C.P., D.P.H.; *Salary*, £80

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate.....	38·9	...	32·8	...	34·3
Death-rate	19·0	...	20·3	...	19·7
Zymotic death-rate.....	2·72	...	3·77	...	40·1
Phthisis ,,	1·09	...	1·33	...	1·35
Respiratory ,,	3·74	...	3·44	...	3·84
Rate of deaths under 1 year to 1,000 births.....	152	...	205	...	194

An increase in the birth-rate of 6·1 per 1,000 as compared with last year is accompanied by a decrease in the death-rate of 1·3. The zymotic rate declined 1·05, and the proportion of infant deaths to births was much more favourable. The death-rate varied from 21·0 in St. James' Ward to 19·9 in Town Hall Ward, and 14·3 in Abbey Hey Ward. Measles had an extensive prevalence and caused 27 deaths—equal to a rate of 0·98 per 1,000 of the population. Whooping cough gave rise to 10 deaths and diarrhoea 20 deaths. The latter disease has for some years been very troublesome, but owing to the cold and wet summer of the year under report it has been much less prevalent, and the mortality rate is only 0·72, as compared with 2·85 in 1901, and an average of 2·7 for the

preceding five years. Small-pox gave rise to 1 case—a man who worked at a brick kiln in Reddish from where several cases of the disease had been removed. Scarlet fever again caused a large number of cases, viz., 124 against 123 last year, and 8 had a fatal termination. Typhoid fever contributed 33 cases 6 deaths, diphtheria and membranous croup 13 cases 4 deaths, erysipelas 14 cases, and puerperal fever 1 case.

Hospital Accommodation.—Eighteen cases were removed to hospital—11 to Withington (Baguley), 4 to Stockport, and 3 to Manchester. Seven of these were scarlet fever, 6 typhoid fever, 3 erysipelas, and small-pox and puerperal fever 1 each. The average cost per patient was £10 12s. 7d. A hospital of 10 beds has been erected at a cost of £630 for the treatment of small-pox cases and is now open for the reception of patients.

Disinfection.—Chlorine is used for the fumigation of houses, 162 premises being dealt with. Steam apparatus at the hospital is available for clothing, &c.

Water Supply obtained from the Manchester Corporation.

Sewerage, Scavenging, &c.—The Chief Inspector of the Mersey and Irwell Joint Committee reported that “the sewage works were only capable of dealing with the dry weather flow of the district, every shower of rain bringing the storm overflow into use, and there is no doubt that the frequency with which this occurs accounts in a large measure for the filthy condition of Gore Brook, and the numerous complaints to which it gives rise.” On two occasions, June and November, the Joint Committee instituted legal proceedings against the Council for polluting the brook referred to, and fines amounting to over £42 were inflicted. Extensions of the present works are now in hand and it is hoped that they will be completed by October next. Scavenging receives attention from the Council’s employees. A refuse destructor will shortly be erected.

Sanitary Inspection.—Bakehouses (13) and slaughterhouses (3) are in good condition, and dairies (153) and cowsheds (10) appear to be fairly satisfactory. Factories and workshops came under observation, and in several instances alterations respecting the closet accommodation were insisted upon. One hundred and ninety-five privy middens were converted to the water-carriage system. The Inspector (Mr. Prescott) served 393 notices, and as a result, 950 nuisances were abated. In 4 cases legal proceedings were required. Ten smoke observations are reported.

Grange.—(Area in acres, 1,540; Census Population, 1,993).
Medical Officer of Health, G. H. PATTERSON, M.R.C.S., D.P.H.; *Salary*, £30.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years 1892-1901.
Birth-rate.....	10·5	...	10·5	...	13·7
Death-rate	11·0	...	11·5	...	10·7
Zymotic death-rate.....	Nil.	...	0·50	...	0·39
Phthisis ,,	3·51	...	3·01	...	1·52
Respiratory ,,	1·00	...	1·00	...	1·44
Rate of deaths under 1 year to 1,000 births.....	95	...	142	...	88

The death-rate (11·0) includes 5 deaths of visitors; excluding these the rate is equal to 8·5 per 1,000, the same as the net rate for last year. Not a single death took place from the seven principal zymotic diseases, and no case of infectious disease was notified. The phthisis rate is high, but most of the victims to this disease are non-residents who visit Grange in search of a cure.

Hospital Accommodation.—Nil.

Disinfection.—No apparatus.

Water Supply ample for the requirements of the district.

Sewerage, Scavenging, &c.—The new sewerage and fore-shore improvement scheme has been commenced, the Council themselves undertaking the work. Scavenging is at present performed by contract. An improvement would no doubt be effected if the Council took this matter in their own hands.

Sanitary Inspection.—There are no dairies or cowsheds in the district. Bakehouses are described as “good,” and the only slaughter-house is fairly well conducted. It was not necessary to issue any notices for nuisance abatement.

Great Crosby.—(Area in acres, 1,907 ; Estimated Population, 7,768).—*Medical Officer of Health*, W. S. LIMRICK, L.R.C.P.E. ; *Salary*, £60.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate.....	17·8	...	21·4	...	21·3
Death-rate	11·1	...	12·5	...	10·8
Zymotic death-rate.....	0·64	...	1·05	...	0·93
Phthisis ,,	0·51	...	1·05	...	0·70
Respiratory ,,	2·05	...	2·25	...	1·88
Rate of deaths under 1 year to 1,000 births.....	136	...	129	...	103

The birth-rate is the lowest recorded during the last 12 years, while the death-rate is fractionally above the average. Of the 5 deaths ascribed to the seven principal zymotic diseases, diphtheria claimed 2, typhoid and continued fevers 2, and scarlet fever 1. Two cases of small-pox were reported in May ; in the first case the disease was said to have been contracted in a tramcar. Both patients were treated at home. Scarlet fever gave rise to 44 cases, and the remaining notifications were typhoid fever 13, diphtheria 9, erysipelas 9, and relapsing fever 1.

Hospital Accommodation.—Seventeen cases were removed to the Bootle Corporation hospital, viz., scarlet fever 15,

typhoid fever 1, and diphtheria 1. The cost for hospital accommodation was as follows:—Annual contribution, £150 7s. 6d.; maintenance of patients and cost of removal £110 6s. Total, £260 13s. 6d.

Disinfection.—The gas stove was used 54 times for the disinfection of clothing, &c., and 75 rooms were fumigated.

Water Supply good, obtained from Liverpool Corporation.

Sewerage, Scavenging, &c.—Sewage is discharged into the sea. The smoke test was applied to the drains of 126 premises, and resulted in the discovery of defects in almost every case. The Authority carry out scavenging in a satisfactory manner.

Sanitary Inspection.—Bakehouses, dairies, and cowsheds—periodically inspected—were found in good condition. The systematic examination of workshops was carried out with good results. The Inspector (Mr. Wilson) served 123 notices for the abatement of nuisances, many being of a comprehensive character and applying to several premises. Seven smoke nuisances were abated.

Great Harwood.—(Area in acres, 2,868; Estimated Population, 12,250).—*Medical Officer of Health*, JOHN PATCHETT, L.R.C.P.E.; *Salary*, £40.

Per 1,000 of Population.	1902.	1901.	Mean of 10 years 1892-1901.	
Birth-rate.....	25·3 ...	25·8 ...	28·3	
Death-rate	13·5 ...	16·3 ...	14·8	
Zymotic death-rate.....	1·30 ...	2·16 ...	1·40	
Phthisis ,,	0·57 ...	0·99 ...	0·93	
Respiratory ,,	2·04 ...	3·07 ...	2·82	
Rate of deaths under 1 year to 1,000 births	161 ...	170 ...	141	

The mortality statistics presented by Dr. Patchett compare favourably with the preceding year. The death-rate is

reduced 2·8, the zymotic rate 0·86, and the infantile mortality is slightly less, although well above the average of the 10 years 1892-1901. Measles did not give rise to a single death, but whooping cough and diarrhoea contributed 4 and 3 deaths respectively. The epidemic of scarlet fever which prevailed during the latter half of 1901 continued during the year under report, and 73 cases were notified, 5 of which had a fatal termination. Typhoid fever was the cause of 17 cases 2 deaths, diphtheria 11 cases 2 deaths, erysipelas 6 cases and puerperal fever 2 cases.

Hospital Accommodation.—Nil. The Medical Officer of Health urges the Council to make some provision in case of a small-pox outbreak, and at the same time the question of providing accommodation for ordinary infectious cases might be considered.

Disinfection.—No proper appliances.

Water Supply good, obtained from Accrington.

Sewerage, Scavenging, &c.—The Great Harwood and Clayton-le-Moors Joint Sewerage Board have been requested by the Ribble Joint Committee to adopt a definite scheme for improving the treatment of the sewage, and the proposed method of purification has been laid before the Local Government Board. The Authority carry out scavenging in an efficient manner.

Sanitary Inspection.—The Medical Officer of Health recommends the Council to close several blocks of property as being unfit for human habitation. A public abattoir has just been erected on the latest principles. The cowsheds are clean and fairly well drained, but somewhat low and short of air space. Bakehouses and factories and workshops are described as “fairly satisfactory.” To secure the abatement of 37 nuisances 51 notices were required. Smoke observations numbered 16.

Haslingden (Borough).—(Area in acres, 8,196; Census Population, 18,543.)—*Medical Officer of Health*, J. A. HARRISON, M.D.; *Salary*, £50.

Per 1,000 of Population.	1902.	1901.	Mean of 10 years, 1892-1901.
Birth-rate.....	22·3 ...	20·0 ...	24·4
Death-rate	15·4 ...	14·0 ...	16·3
Zymotic death-rate.....	2·10 ...	1·29 ...	1·80
Phthisis ,,	0·80 ...	0·88 ...	1·03
Respiratory ,,	2·58 ...	2·58 ...	3·29
Rate of deaths under 1 year to 1,000 births.....	146 ...	153 ...	168

The birth-rate was 2·3 per 1,000 more than last year, but 2·1 below the mean of the 10 years 1892-1901. The general death-rate and zymotic rate were not so favourable as in 1901, but the phthisis and infant death rates show a slight diminution. The death-rate varied from 19·3 in Grane Ward to 9·5 in Helmsore Ward. Of the 39 deaths ascribed to the seven principal zymotic diseases, measles claimed 16, diphtheria 12, diarrhoea 6, typhoid fever 4, and whooping cough 1. It is pleasing to note that scarlet fever, which has been almost endemic for several years, was the cause of only 34 notifications during the past year, without a single death. On the other hand diphtheria—associated with membranous croup—was the cause of 65 notifications as compared with 15 in 1901. The disease was so prevalent in Acre Ward that it was deemed advisable to close the Stonefold Day School for about two months. The drainage of the school premises was found to be in a very unsatisfactory state. In the absence of an isolation hospital very little can be done to prevent these diseases from spreading. Typhoid fever gave rise to 36 cases. In one house in Town Ward a family of 7 persons was attacked; the disease evidently started in consequence of sewage-polluted soil being disturbed whilst putting in new sewers at the back of the property, and the

subsequent cases were, in all probability, the result of personal contact. The remaining notifications were—erysipelas 23 and puerperal fever 1.

Hospital Accommodation.—An old farmhouse at Clod has hitherto been used occasionally for small-pox cases, but recently plans for a proper small-pox hospital have been approved by the Corporation and submitted to the Local Government Board. Dr. Harrison urges the Council to provide some accommodation for the isolation of ordinary infectious cases.

Disinfection. — Steam apparatus provided. Sixty-four houses were fumigated.

Water Supply.—The bulk of the houses in the borough are supplied from Clough Bottom reservoir. The danger of allowing houses at Carrs to be supplied with water from the fields behind is again referred to.

Sewerage, Scavenging, &c.—Sewage is treated by the bacterial process at the joint outfall works at Ewood Bridge. On two occasions the Mersey and Irwell Joint Committee have drawn attention to unsatisfactory effluents. The Carrs district has not yet been paved and sewered, but borrowing powers have been obtained to enable the work to be done. The borough is very well scavenged mainly by the employees of the Corporation. A refuse destructor is very much needed as the tips now used often give rise to a nuisance.

Sanitary Inspection.—Bakehouses and common lodging-houses are found to be kept in a cleanly condition and to comply with the bye-laws. Slaughter-houses are in “fair order.” Very little action is taken under the Dairies, Cowsheds, and Milkshops Order. It has not been necessary to take any steps for infringement of the Factory and Workshop Act. The work of converting pail-closets to the waste-water system, which was commenced a few years ago, continues, 97 being dealt with during the year, and 22 privy middens were

abolished. The Inspector (Mr. Hoyle) served 186 notices, and nearly all the nuisances referred to were abated.

Haydock.—(Area in acres, 2,411; Estimated Population, 8,750).—*Medical Officer of Health*, T. E. HAYWARD, M.B. (Lond.); *Salary*, £60.

Per 1,000 of Population.	1902.	1901.	Mean of 10 years, 1892-1901.
Birth-rate... ..	38·9 ...	42·4 ...	39·4
Death-rate	15·6 ...	18·9 ...	17·3
Zymotic death-rate.....	3·65 ...	5·54 ...	3·16
Phthisis ,, 	1·14 ...	0·69 ...	0·91
Respiratory ,, 	3·20 ...	2·31 ...	2·69
Rate of deaths under 1 year to 1,000 births.....	164 ...	190 ...	159

The exceptionally high birth-rate of 1901 has not been maintained during the year under review, but the rate is still well above the County average. The general death-rate shows a reduction of 3·3 per 1,000 as compared with last year, and the zymotic rate—although still high—declined 1·89. In February an outbreak of measles occurred in West Ward and afterwards spread to Central Ward; altogether 8 deaths were due to this cause. Two schools were closed for a period of three weeks with satisfactory results. Diarrhœa accounted for 8 deaths, and whooping cough 2. Scarlet fever, of a mild type, contributed 37 cases, only 1 ending fatally. Typhoid fever gave rise to 13 cases 6 deaths, diphtheria and membranous croup 12 cases, and erysipelas 12 cases. For a period of three months chicken-pox was constituted a voluntarily notifiable disease as a safeguard against slight cases of modified small-pox being overlooked, and in accordance with this provision 13 cases were notified. The arrangement entered into some years ago for bacteriological examinations has continued in operation and afforded valuable aid in the diagnosis of typhoid fever, diphtheria, and preliminary tuberculosis.

Hospital Accommodation.—Infectious cases are treated by arrangement at the hospital of the St. Helens Corporation. During 1902, 18 cases were removed, viz., scarlet fever 12 and typhoid fever 6. Prior to August 11th of the year under review the cost of removal and maintenance of patients was borne by the District Council, but after that date a graduated scale of charges, varying from 10s. to 30s. per week according to the income of the patient's family, was imposed. Dr. Hayward regrets this action as a "retrograde step," and very properly observes that "the primary reason for removal, and the chief advantage gained by it, is the good of the community generally, and that, therefore, any procedure which may tend to limit and hinder the use made of the isolation hospital is against the public well-being."

Disinfection.—The steam apparatus at St. Helens is available for bedding, clothing, &c. Thirty-one houses underwent sulphur fumigation.

Water Supply obtained from the Rivington reservoirs of the Liverpool Corporation.

Sewerage, Scavenging, &c.—The Medical Officer of Health asks his Council to take into consideration "the need for some regularly planned scheme of main drainage, with proper provision for dealing with the sewage and purifying the effluent, so that it may be ultimately possible to replace the existing privy-midden system of excrement disposal by some suitable form of water-carriage." Scavenging is performed by the Authority.

Sanitary Inspection.—Last year I noted with satisfaction that the Council had resolved to appoint a qualified inspector to devote his whole time to sanitary work, and I regret to now observe that the Council have reverted to the former arrangement of combining several other offices with that of Inspector of Nuisances. Bakehouses, slaughter-houses, dairies, and cowsheds are kept fairly clean and generally in a satisfactory condition. Twenty-six privy middens were reconstructed or

re-arranged. The Inspector (Mr. Dickinson) served 57 notices for the abatement of nuisances.

Heaton Norris.—(Area in acres, 1,619 ; Estimated Population, 9,752).—*Medical Officer of Health*, F. W. JORDAN, M.D., D.P.H. ; *Salary*, £50 (no claim).

Per 1,000 of Population.	1902.	1901.	Mean of 10 years, 1892-1901.	
Birth-rate.....	15·5 ...	16·5 ...	16·7	
Death-rate	9·5 ...	12·0 ...	11·5	
Zymotic death-rate....	0·20 ...	1·57 ...	0·93	
Phthisis ,,	0·71 ...	1·15 ...	0·95	
Respiratory ,,	0·92 ...	0·84 ...	2·15	
Rate of deaths under 1 year to 1,000 births.....	85 ...	133 ...	121	

The general death-rate and the infant rate are, with one exception (1897), the lowest recorded during the preceding decade. The zymotic rate—due to 2 deaths from diarrhoea—is low, and the phthisis and respiratory rates are satisfactory. At the fall of the year an epidemic of measles occurred in the Heaton Chapel district, and one of the public elementary schools was closed. Scarlet fever (36 cases) occurred to a slight extent throughout the greater portion of the year, and in November assumed epidemic proportions. The disease was prevalent in an adjoining district intimately associated with Heaton Mersey by school children, and this may have been the primary cause ; the schools in this portion of the district were closed. Typhoid fever gave rise to 5 cases, and diphtheria and erysipelas 3 cases each. Fourteen specimens of diseased tissue were submitted for bacteriological examination.

Hospital Accommodation.—Eighteen cases were removed to the Salford sanatorium, viz., scarlet fever 16, typhoid fever 1, and diphtheria 1. An arrangement has been made with the Stockport Corporation, “on almost prohibitive terms,” to take any case of small-pox that might arise, and it has now been

decided to erect, in conjunction with the Cheadle Urban District Council (Cheshire), a small-pox hospital.

Disinfection.—Houses are fumigated with formaldehyde, and infected bedding, &c., is occasionally stoved at the Salford sanatorium.

Water Supply described as “good.”

Sewerage, Scavenging, &c.—The effluent from the sewage works appears to have been satisfactory. Scavenging in the hands of the Authority is well performed.

Sanitary Inspection.—One cottage has been demolished, and two others condemned as unfit for human habitation. Bakehouses, slaughter-houses, dairies and cowsheds are, on the whole, good. Considerable improvements have been effected at three of the farms. Factories and workshops are kept under observation, and in one instance additional w.c. accommodation was provided. Nineteen nuisances were abated, 9 notices served, 12 smoke observations taken, &c. A summary of meteorological observations by Dr. Jordan is appended to the report.

Heysham.—(Area in acres, 1,835 ; Census Population, 3,381).

Medical Officer of Health, R. B. GASS, M.B., C.M. ;
Salary, £20.

Per 1,000 of Population,	1902.		1901.		Mean of 3 years 1899-1901.
Birth-rate.....	28·6	...	25·1	...	20·9
Death-rate	17·4	...	11·8	...	10·5
Zymotic death-rate.....	1·47	...	0·59	...	0·72
Phthisis ,, 	1·18	...	2·07	...	0·85
Respiratory ,, 	0·59	...	0·88	...	1·01
Rate of deaths under 1 year to 1,000 births.....	164	...	129	...	94

The birth and death rates for the year under report show

increases of 3·5 and 5·6 per 1,000 of the population respectively as compared with 1901. The zymotic and infant rates are also above the average of previous years. Dr. Gass attributes several of the infant deaths to injudicious dieting. Not a single fatality occurred from measles, whooping cough, or diarrhoea. Small-pox gave rise to 2 cases, both at Klondyke; the first case developed in the district, but the second was that of a tramp who was only in Heysham one day. Both cases were isolated at Lancaster. Scarlet fever contributed 6 cases, typhoid fever 11 cases 2 deaths, diphtheria 5 cases 3 deaths, and erysipelas 2 cases.

Hospital Accommodation.—The new hospital buildings are making rapid progress towards completion.

Disinfection.—The provision of efficient disinfecting appliances is recommended.

Water Supply, obtained from Lancaster, excellent both in quality and quantity.

Sewerage, Scavenging, &c.—The sewerage system is gradually being extended. The sewage discharges into tidal currents. There are several ditches on the Battery estate which are “a source of danger to the public health” owing to the retention of decomposing animal and vegetable matter. The District Council might take this matter in hand. The system of scavenging “becomes more efficient each year.” Refuse is at present disposed of on tips and in dykes, and afterwards covered with inoffensive matter; a refuse destructor would be of great value.

Sanitary Inspection.—A few back-to-back houses are still in existence. “Dawson City is a source of anxiety: all kinds of vegetable and animal refuse is tossed into the street, and the drains are frequently stopped.” Bakehouses and slaughterhouses are described as “good.” No attention is given to dairies and cowsheds, and regulations have not yet been adopted. Details of the Inspector’s work are not given.

Heywood (Borough).—(Area in acres, 3,660; Estimated Population, 25,915).—*Medical Officer of Health*, H. H. I. HITCHON, M.R.C.S.; *Salary*, £100.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate.....	24·1	...	21·3	...	24·6
Death-rate	17·4	...	16·0	...	19·7
Zymotic death-rate.....	1·27	...	1·33	...	2·21
Phthisis ,,	1·50	...	2·12	...	1·96
Respiratory ,,	3·58	...	3·06	...	4·32
Rate of deaths under 1 year to 1,000 births... ..	124	...	128	...	181

The birth and death rates show increases of 2·8 and 1·4 per 1,000 of the population respectively as compared with last year. The zymotic rate is fractionally reduced, and the proportion of infant deaths to births is the lowest recorded during the last 20 years. Many of the infant deaths were, according to Dr. Hitchon, due to “improper feeding, exposure to cold and wet, and improper nursing.” The “nursing-out system” he describes as a source of danger, and suggests that instruction in the hygiene of infant life should be given in all day schools. Measles, although only the cause of 3 deaths, was rather prevalent at the end of the year, and necessitated school closure. Diarrhoea gave rise to 9 deaths, the lowest mortality recorded for many years. One case of small-pox occurred—a boy aged 6½ years, who had not been vaccinated. He had a confluent attack, and made an excellent recovery after a stay of seven weeks in hospital. Of the notifiable diseases diphtheria gave rise to most trouble, 51 cases being notified, 16 of which had a fatal termination. The outbreak was not confined to any particular area, but was distributed throughout the Borough. Many of the cases were verified by bacteriological examination. Scarlet fever contributed 22 cases 2 deaths, typhoid fever 7 cases 3 deaths, and puerperal fever 4 cases.

Hospital Accommodation.—A small hospital of 12 beds is provided at Birtle, but is reserved for small-pox only.

Disinfection.—Steam apparatus at the hospital is available, but it would be much more convenient if erected nearer the town, say at the destructor works.

Water Supply described as good, obtained from the Heywood and Middleton Joint Board.

Sewerage, Scavenging, &c.—Sewage is treated by precipitation and land filtration. Extensions at the outfall works are contemplated. Steps are now being taken to ventilate the sewers and to prevent the objectionable and dangerous practice of turning into them steam from mill boilers. The Authority carry out scavenging in a satisfactory manner. A refuse destructor has just been provided.

Sanitary Inspection.—Four houses were closed voluntarily. Bakehouses are described as “good,” and common lodging-houses as “much improved.” The 18 private slaughter-houses are regularly visited; in two cases notices were served for structural alterations, which have been carried out. Many of these premises are placed in close proximity to dwellings, and unless the strictest supervision is exercised as to cleanliness and quick removal of offal, serious nuisances arise. Thirteen notices were required for cleansing and lime-washing cow-sheds, and there is room for improvement in the structural condition of these places. Factories and workshops (198) have been inspected, with good results. Conversion of the privy midden to the water-carriage system is being carried out, 244 being so converted during the year, and in addition 67 pail closets were abolished and water closets substituted. There are still 3,403 houses in the Borough with the old-fashioned and objectionable privy system. An outbreak of swine fever at Birtle and Barley Hall was successfully dealt with. The Inspector (Mr. Robinson) reports on a large

amount of sanitary work accomplished, including the abatement of 976 nuisances, the service of 1,030 notices, 1,823 re-inspections of premises, 398 drains reconstructed or repaired, 13 canal boats examined, 37 smoke observations, &c. In two instances legal proceedings were taken.

Hindley.—(Area in acres, 2,612; Estimated Population, 24,232).—*Medical Officer of Health*, JAMES CHRONNELL, M.R.C.S.; *Salary*, £70.

Per 1,000 of Population.	1902.	1901.	Mean of 10 years 1892-1901.
Birth-rate.....	35·8 ...	39·2 ...	40·0
Death-rate	17·7 ...	21·2 ...	21·3
Zymotic death-rate.....	2·06 ...	4·91 ...	4·07
Phthisis ,,	0·66 ...	0·76 ...	0·74
Respiratory ,,	3·42 ...	4·48 ...	5·03
Rate of deaths under 1 year to 1,000 births.....	181 ...	213 ...	183

The birth and death rates for the year under review are lower than any recorded in the preceding decade, being 4·2 and 3·6 per 1,000 respectively below the average of that period. The infantile mortality still remains high; lack of cleanliness and improper feeding are two important factors in swelling this rate. Dr. Chronnell mentions that he recently saw a child a few months old suffering from diarrhœa, and the mother told him she was feeding it on cheese—the only remedy she knew! An epidemic of measles marked the beginning of the year and occasioned 4 deaths against 13 in 1901. Whooping cough and diarrhœa contributed 13 and 7 deaths respectively. The notifications of infectious diseases numbered 207, against 427 last year, and 473 in 1900. Diphtheria—associated with membranous croup—again had the greatest prevalence, but did not spread to the same alarming extent as in 1901; 95 cases were reported and 9 deaths resulted, as compared with 244 cases 23 deaths last year. South Ward,

which is low-lying and has a cold damp soil, again suffered most. Scarlet fever was responsible for 51 cases 5 deaths, against 92 cases 2 deaths last year, and 355 cases 19 deaths in 1900 ; typhoid fever contributed 32 cases 12 deaths, as compared with 63 cases 8 deaths in 1901. The remaining notifications were erysipelas 19 cases, and puerperal fever 10 cases. Typhoid fever is endemic, but the Medical Officer of Health believes that it would almost entirely disappear if the water-carriage system replaced the wet and foul ash-pits.

Hospital Accommodation.—Notwithstanding the large number of cases notified hospital isolation was not attempted as the small hospital was kept in readiness for small-pox.

Disinfection.—No proper appliances ; 200 houses were fumigated with sulphur.

Water Supply good and abundant, obtained from the Rivington reservoirs belonging to the Liverpool Corporation.

Sewerage, Scavenging, &c.—Sewage is treated by chemical precipitation and land filtration. Complaints have been made from time to time with reference to the polluted condition of the Borsdane Brook by sewage from this district, and the Council are now taking steps to improve matters. The Authority carry out scavenging in a satisfactory manner.

Sanitary Inspection.—Five houses—unfit for human habitation—were condemned and closed. Dr. Chronnell states, “in my opinion all the single houses in the district ought to be closed, the privy middens abolished, and all yards paved and flagged ; and then some power ought to be in the hands of the Sanitary Authority to compel owners and tenants to keep their dwellings sweet and clean.” Bakehouses and slaughter-houses are described as “satisfactory,” and dairies and cowsheds “fair.” It is to be regretted that the Council have not yet adopted dairy and cowshed regulations. One hundred and fifty-five premises were inspected under the

Factory and Workshop Act, and on the whole they complied with the requirements. It has recently been decided to erect a public mortuary. The Inspector (Mr. Southern) served 299 notices for the abatement of nuisances, and nearly all received attention.

Horwich.—(Area in acres, 3,257); Estimated Population, 15,337).—*Medical Officer of Health*, G. H. WHITAKER, L.R.C.P.E.; *Salary*, £40.

Per 1,000 of Population.	1902.	1901.	Mean of 10 years, 1892-1901.
Birth-rate.....	31·6 ...	30·6	35·5
Death-rate	13·9 ...	13·9 ...	15·8
Zymotic death-rate.....	1·82 ...	1·39 ...	2·18
Phthisis ,,	0·52 ...	0·39 ...	0·63
Respiratory ,,	2·67 ...	2·98 ...	3·32
Rate of deaths under 1 year to 1,000 births.....	96 ...	162 ..	156

The general death-rate remains exactly the same as last year; the zymotic rate is slightly increased, but the proportion of deaths of infants under one year to 1,000 births is the lowest recorded during the past decade. The principal features of the year have been an epidemic of measles in the second quarter, and the widespread prevalence of scarlet fever in the last quarter. The former disease caused 14 deaths, and the latter 157 cases 5 deaths. Whooping cough and diarrhoea each contributed 2 deaths. Small-pox gave rise to 2 cases; the origin of the first could not be traced, but the second was distinctly traceable to contact with another case in an adjoining district. The temporary hospital at Red Moss was utilised for the treatment of the cases, and both recovered. Diphtheria—associated with membranous croup—gave some trouble, 36 cases being notified and 4 terminated fatally. Dampness of houses and surroundings and the want of means of isolation no doubt accounted to some extent for the prevalence of these

disorders. Typhoid fever was responsible for 13 cases 1 death, erysipelas 25 cases, continued fever 1 case, and puerperal fever 1 case.

Hospital Accommodation.—A temporary hospital (5 beds) is provided for small-pox cases on Red Moss, and the question of increasing the accommodation has been under consideration. Two cases were treated during the year. A new joint hospital for ordinary infectious diseases is in course of erection at Fall Birch.

Disinfection.—Formalin or sulphur is used for house fumigation, and steam apparatus is available for bedding, clothing, &c.

Water Supply good and plentiful. A new reservoir will shortly be constructed, and it is expected that the objectionable hardness will then be removed.

Sewerage, Scavenging, &c.—The effluent from the outfall works has at times not given satisfaction to the Ribble Joint Committee, but it is intended shortly to apply to the Local Government Board for sanction to a loan of £12,000 for sewage works extension. Scavenging is performed by the Council's workmen.

Sanitary Inspection.—Closure of 8 dilapidated houses took place, and 9 back-to-back dwellings were converted into through houses. Bakehouses, slaughter-houses, and lodging-houses are kept clean, but the state of repair and sanitary conveniences of the latter do not give satisfaction. The condition of dairies and cowsheds has been improved, but it is to be regretted that Regulations are not in force. During the inspection of factories and workshops some insanitary conditions were brought to light, and additional closet accommodation was found to be necessary. Seventy-three privy middens were converted to the water-carriage system. The Inspector (Mr. Brocklehurst) secured the abatement of 461 nuisances as a result of 103 notices. Ten smoke observations were taken.

Hurst.—(Area in acres, 638; Census Population, 7,145.)

Medical Officer of Health, T. COOKE, M.R.C.S.; *Salary*, £30.

Per 1,000 of Population.	1902.		1901.		Mean of 6 years, 1896-1901.
Birth-rate.....	26·8	...	28·1	...	29·5
Death-rate	17·6	...	16·3	...	19·4
Zymotic death-rate.....	0·97	...	1·39	...	2·13
Phthisis ,,	1·81	...	1·95	...	1·38
Respiratory ,,	3·91	...	2·37	...	4·00
Rate of deaths under 1 year to 1,000 births.....	156	...	199	...	194

As compared with last year the birth-rate shows a decrease, and the death-rate an increase equal to 1·3 per 1,000 of the population. The zymotic and infant rates compare very favourably with previous years. Measles and diarrhœa did not give rise to a single death, and only 1 death was due to whooping cough. Scarlet fever prevailed somewhat extensively, 87 cases being reported; 4 deaths resulted. Typhoid fever caused 2 cases 1 death, membranous croup 1 case (fatal), continued fever 3 cases, and puerperal fever 1 case.

Hospital Accommodation.—Not a single case was removed to hospital, although this district has the privilege of sending cases to the Ashton-under-Lyne hospital.

Disinfection.—No proper apparatus. Houses fumigated with formaldehyde.

Water Supply good, obtained from the Ashton, &c., Joint Waterworks.

Sewerage, Scavenging, &c.—The sewers are connected to the Ashton-under-Lyne system. Scavenging is efficiently performed by the Council's employees.

Sanitary Inspection.—Attention is drawn to the unsatisfactory condition of Hill Street (Hurst Nook). Bakehouses,

slaughter-houses, dairies and cowsheds are all in "fair sanitary condition," and factories and workshops are described as satisfactory. A large number of privy middens have been converted to the waste-water carriage system, and the reduction in the number of old closets is tending to improve the sanitary state of the district. Details of the Inspector's work are again wanting, but it is stated that where nuisances existed notices were served for their abatement.

Huyton-with-Roby.—(Area in acres, 3,053 ; Census Population, 4,661).—*Medical Officer of Health*, EGERTON F. HALL, M.D.; *Salary*, £30.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate.....	27·2	...	27·2	...	28·6
Death-rate	13·3	...	15·8	...	13·2
Zymotic death-rate.....	0·64	...	1·71	...	1·24
Phthisis ,,	0·64	...	0·64	...	0·70
Respiratory ,,	2·14	...	2·36	...	2·76
Rate of deaths under 1 year to 1,000 births.....	165	...	127	...	114

With the exception of the infant mortality the statistics presented by Dr. Hall compare favourably with those of 1901. The zymotic rate was accounted for by 2 diarrhoea deaths and 1 death from scarlet fever. Forty-two notifications were received, viz., scarlet fever 25, diphtheria 12, typhoid fever 3, and erysipelas 2. One of the typhoid fever cases was attributed to eating oysters. The scarlet fever cases were spread over the whole year.

Hospital Accommodation.—One bed is reserved at the Whiston sanatorium for the use of this district. Seven cases of scarlet fever and 1 case of diphtheria were removed during the year.

Disinfection.—Steam apparatus at the hospital is available.

Water Supply said to be “good.”

Sewerage, Scavenging, &c.—Sewage is conveyed to outfall works. Regular attention is paid to the ditches. The Authority perform the scavenging in a satisfactory manner.

Sanitary Inspection.—Dairies and cowsheds—subject to regulations—are now kept better than formerly. Bakehouses are described as “fair,” and the factories and workshops appear to comply with sanitary requirements. Details of the Inspector’s work are not given.

Ince-in-Makerfield.—(Area in acres, 2,320; Estimated Population, 21,534).—*Medical Officer of Health*, J. H. FLETCHER, M.R.C.S.; *Salary*, £60.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate.....	41·2	...	40·1	...	41·3
Death-rate	22·7	...	23·0	...	22·4
Zymotic death-rate.....	2·83	...	4·59	...	3·67
Phthisis ,,	0·55	...	0·60	...	0·55
Respiratory ,,	8·03	...	5·53	...	4·71
Rate of deaths under 1 year to 1,000 births.....	190	...	235	...	207

The birth-rate, as well as the death-rate, were again high, and much above the County average. The respiratory rate proved excessive, and the infant rate, although high, was below the mean of the previous decade and more favourable than in any year since 1896. In reporting on the latter mortality the usual references are made to bad nursing, careless feeding, and the want of personal cleanliness. Measles gave rise to only 3 deaths as compared with 17 in the previous year, and the diarrhoea deaths declined from 55 in 1901 to 20 during the period under review. On the other hand, whooping cough was the cause of 12 deaths, against half that number last year.

Scarlet fever, with 178 cases 9 deaths, was prevalent throughout the year, and was spread over the whole district, but Central, East, and South Wards suffered most. In connection with this disease four inspections of the schools were made, and each time one or two children were found in the peeling stage. Diphtheria—associated with membranous croup—had an increased prevalence, 62 cases and 13 deaths occurring, against 39 cases 11 deaths in 1901. Typhoid fever contributed 33 cases 4 deaths, erysipelas 44 cases, puerperal fever 3 cases, and continued fever 1 case.

Hospital Accommodation consists of a small hospital provided with 11 beds, and with sufficient room for 3 more; also a separate block of 12 beds reserved for small-pox cases. Thirty-eight cases were treated, viz., scarlet fever 36 and typhoid fever 2.

Disinfection.—Steam apparatus at the hospital is available. Houses fumigated numbered 287.

Water Supply good and constant; partly deep well water belonging to the Council at Golborne, and partly from the Liverpool Corporation reservoir at Rivington.

Sewerage, Scavenging, &c.—Sewage is treated by chemical precipitation and artificial filtration. The Chief Inspector of the Ribble Joint Committee reports that “the nature and size of the filtration area are not very satisfactory.” Sewers are now extended to all parts of the district except Little Westwood and a few outstanding houses. Scavenging is efficiently carried out by the Authority.

Sanitary Inspection.—One house, reported as unsatisfactory, was put in proper repair; since 1895, 200 houses have been dealt with under the Housing of the Working Classes Act, 60 having been demolished. Dairies and cowsheds are described as “fairly good,” and bakehouses “good.” Factories and workshops were, on the whole, found clean, well

ventilated, and free from nuisance. Of 61 canal boats examined 8 infringements were found. The privy midden system is in vogue, and Dr. Fletcher says:—"Much as I dislike the system, I am reluctantly of opinion that no other is practicable in this district without very heavy expense and danger, for if it be found, as it is, that the present sewers are constantly breaking, owing to mining subsidences, it is certain that any sewer laid for the establishment of a water closet system would give similar trouble, and might leak and pollute the soil for weeks before being discovered and remedied." At least the privy middens should be made impermeable or the pail system substituted. In concluding his report the Medical Officer of Health desires his Council to make "more stringent bye-laws on the basis of the Local Government Board's model bye-laws, especially in regard to proper protection of the sites of new houses from ground air and damp," and also to insist that "gradually all the yards or courts at present unpaved should be properly paved." In these directions much could be done to render the privy-midden system as innocuous as possible. The Inspector (Mr. Corrigan) reports on 254 nuisances dealt with.

Irlam.—(Area in acres, 4,620; Estimated Population, 4,700).
Medical Officer of Health, EDWIN O. JAGO, M.R.C.S.;
Salary, £20.

Per 1,000 of Population.	1902.		1901.		Mean of 7 years, 1895-1901.
Birth-rate.....	34·0	...	36·9	...	27·6
Death-rate	10·6	...	15·2	...	13·7
Zymotic death-rate.....	0·63	...	3·22	...	2·60
Phthisis ,,	0·42	...	0·46	...	0·66
Respiratory ,,	2·34	...	0·92	...	1·88
Rate of deaths under 1 year to 1,000 births... ..	106	...	93	...	132

The birth-rate, although 2·9 per 1,000 of the population below last year's rate, continues well above the County average.

The death-rate is very low, and 4·6 below the rate of 1901. The zymotic, phthisis, and infant rates are also satisfactory. Whooping cough and diarrhoea did not cause any fatality, and only 2 deaths were ascribed to measles. The latter disease, however, prevailed somewhat extensively in November, and it was found necessary to close the Cadishead Wesleyan School for four weeks. A considerable reduction in the number of cases of infectious disease took place as compared with 1901. Diphtheria gave rise to 2 attacks only, against 50 last year; scarlet fever contributed 4 cases, typhoid fever 9, erysipelas 4, and puerperal fever 2.

Hospital Accommodation said to be available at the Ladywell sanatorium belonging to the Salford Corporation, but not a single case was removed. Temporary premises are provided in case of an outbreak of small-pox.

Disinfection.—All houses are fumigated after infectious disease by formaldehyde gas.

Water Supply.—A good and liberal supply of water is obtained from the reservoirs of the Manchester Corporation.

Sewerage, Scavenging, &c.—Sewage is treated by downward intermittent filtration through osier beds—"the farm meets the need of the district, and the effluent continues of a satisfactory character." Scavenging—now let to contractors—is said to be efficiently performed.

Sanitary Inspection.—Bakehouses and slaughter-houses are well kept. There are no dairies or cowsheds within the district. Factories and workshops receive regular inspection. The Inspector (Mr. Kay) served 23 notices for the abatement of a like number of nuisances. Frequent smoke observations are taken.

Kearsley.—(Area in acres, 1,005; Estimated Population, 9,400.)—*Medical Officer of Health*, J. C. EAMES, M.D.; *Salary*, £40.

Per 1,000 of Population.	1902.	1901.	Mean of 10 years, 1892-1901.
Birth-rate.....	31·2 ...	27·1 ...	31·5
Death-rate	16·2 ...	17·0 ...	17·5
Zymotic death-rate... ..	1·70 ...	3·42 ...	2·53
Phthisis ,,	0·74 ...	1·49 ...	1·21
Respiratory ,,	3·29 ...	2·78 ...	3·25
Rate of deaths under 1 year to 1,000 births.....	136 ...	228 ...	178

An increase in the birth-rate of 4·1 per 1,000 as compared with last year is accompanied by a decrease in the general death-rate. The zymotic rate is reduced one-half, and the rate of deaths under one year to 1,000 births corresponds to 136 against 228. Dr. Eames believes that the instructions issued as to the need for cleanliness and care in the feeding of young children must have had some effect. Measles prevailed throughout the year, but was most troublesome in October when school closure was found necessary to curtail its spread. The disease was of a mild type and only one death resulted. Diarrhoea contributed 6 deaths against 18 in the previous year. The notifications amounted to 55 as compared with 149 last year, and 84 in 1900. Scarlet fever caused 25 cases 2 deaths, typhoid fever 15 cases 2 deaths, diphtheria—associated with membranous croup—10 cases 5 deaths, erysipelas 3 cases, and puerperal fever 2 cases.

Hospital Accommodation.—Eighteen cases of scarlet fever and 2 of typhoid fever were removed to the Ladywell sanatorium (Salford).

Disinfection.—No proper appliances; 60 rooms were fumigated with sulphur.

Water Supply, obtained from Bolton, generally good; in the spring it contained a quantity of vegetable matter.

Sewerage, Scavenging, &c.—Sewage is treated in open septic tanks. On one occasion the Mersey and Irwell Joint Committee complained of the unsatisfactory character of the effluent. At the beginning of the year scavenging was performed by contract, but now it is in the hands of the Authority.

Sanitary Inspection.—Several houses were condemned as unfit for human habitation, but on the necessary improvements being made they were allowed to be occupied. Bake-houses and slaughter-houses—periodically inspected—are in good order, and dairies and cowsheds fair; some of the latter are deficient in light and ventilation. The closet accommodation at some of the factories and workshops is not all that could be desired. The Inspector (Mr. Walsh) secured the abatement of 798 nuisances. He served 120 notices, took 4 smoke observations, &c.

Kirkham.—(Area in acres, 857; Census Population, 3,693.)

Medical Officer of Health, W. W. SHAW, M.R.C.S.; *Salary*, £30.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate.....	30·8	...	30·8	...	29·9
Death-rate	18·1	...	17·8	...	19·2
Zymotic death-rate.....	2·70	...	1·08	...	1·55
Phthisis ,,	1·08	...	0·81	...	2·12
Respiratory ,,	2·70	...	2·16	...	3·58
Rate of deaths under 1 year to 1,000 births.....	166	...	192	...	165

The birth-rate remains the same as last year, and the death-rate shows a fractional increase. The zymotic rate was more than double that of 1901, but the infant rate proved more

favourable. In March measles and scarlet fever broke out simultaneously, and in dealing with these outbreaks school closure was resorted to. Scarlet fever gave rise to 56 cases 6 deaths, and 2 deaths were ascribed to measles. Diarrhoea also contributed 2 deaths. In December a case of small-pox was reported—a man tramping the country looking for work. He was promptly removed to hospital at Elswick; the house where he stayed was disinfected, and the household re-vaccinated and put in quarantine for 14 days. Typhoid fever and puerperal fever each caused 1 case and diphtheria 2 cases.

Hospital Accommodation.—The joint hospital at Moss Side was opened for the reception of patients on April 14th, and 8 cases were subsequently removed from this district, viz., scarlet fever 7 and diphtheria 1. As stated above, the case of small-pox was removed to the temporary pavilion at Elswick provided by the Fylde, Preston, and Garstang Joint Hospital Committee.

Disinfection.—No apparatus; 41 houses were fumigated with sulphur.

Water Supply satisfactory, obtained from the Fylde Water Board.

Sewerage, Scavenging, &c.—Sewage, after passing through settling tanks, flows into the River Ribble. The drains are “not of the best.” Scavenging is performed by the Authority.

Sanitary Inspection. — Bakehouses, lodging-houses, slaughter-houses, dairies and cowsheds, and factories and workshops gave satisfaction to the sanitary officials. Six privy middens were converted to the water-carriage system. The Inspector (Mr. Metcalf) secured the abatement of 163 nuisances after the service of 70 notices. In one instance legal proceedings were successfully instituted.

Lancaster (Borough).—Area in acres, 3,506; Estimated Population, 41,570).—*Medical Officer of Health*, G. R. PARKER, L.R.C.P. (Lond.); *Salary*, £160 (including £20 for the Port).

Per 1,000 of Population.	1902.	1901.	Mean of 10 years, 1892-1901.
Birth-rate.....	26·7 ...	26·1 ...	28·0
Death-rate	14·1 ...	17·9 ...	17·5
Zymotic death-rate.....	1·58 ...	2·75 ...	2·75
Phthisis ,,	1·17 ...	1·57 ...	1·57
Respiratory ,,	2·02 ...	3·22 ...	3·22
Rate of deaths under 1 year to 1,000 births	141 ...	190 ...	190

The birth-rate shows a fractional increase as compared with last year; in 1899 this rate reached its lowest point, and since then has gradually risen. It is still, however, below the average of the decennial period 1892-1901—the average for which is 28·0 per 1,000 of the population. The rate for the year under review varied from 36·33 in Skerton Ward, 32·12 in John O’Gaunt Ward, to 21·58 in Castle Ward, and 14·0 in Park Ward. The general death-rate has fallen to 14·1 per 1,000, as compared with 17·5 the average rate for the previous 10 years, and 17·9 in 1901. Last year it was pointed out that Bulk, Queen’s, Skerton, and St. Anne’s Ward sub-districts showed a much higher death-rate than did the town as a whole; this year the sub-districts in which the rate exceeds the death-rate for the town are Bulk (21·30), St. Anne’s (21·24), Queen’s (15·54), Castle (14·56), and Skerton (14·31). Dr. Parker suggests that a probable cause, though by no means the only one, was the greater density of the population in these sub-districts. He also reports that in streets of back-to-back houses the death-rate was highest in the narrowest streets, and diminished in proportion to the increase in the width of the streets. The rate of deaths under one year to 1,000 births (141) is much below the average, and with the exception of 1894 is the lowest recorded during the

preceding 10 years. The distribution of infant deaths in the sub-districts of the town varied greatly, as will be seen from the undermentioned rates per 1,000 births:—Bulk 305, St. Anne's 248, Queen's 152, Park 141, John O'Gaunt 136, Skerton 93, Scotforth 73, and Castle 72, and the percentage of infantile deaths varied from 13·29 in September, 11·39 in October, to 5·69 in December and 4·43 in July. The Medical Officer of Health states that "a large number of infantile deaths are due to the lamentable ignorance which prevails among the mothers of a certain portion of the community, not only as to the rearing of their children, but also to the treatment of themselves during the parturient state." Measles was prevalent throughout the borough during the year, 28 deaths being registered, or more than double the number recorded in 1901. "Since the notification of measles was abandoned less notice is taken of the complaint, and in most cases isolation is a rarity." Diarrhœa gave rise to only 9 deaths as compared with 31 in the previous year, and the fatalities from whooping cough declined from 27 in 1901 to 3 in the year under report. Small-pox gave rise to 5 cases (1 terminating fatally), but there was no connection between one case and another. The prompt removal to hospital and other steps taken prevented the spread of the disease. The first case (which proved fatal), on April 30th, was a man who tramped from Leeds to Lancaster. The origin of the second case—modified—could not be traced. The third, on August 26th, was a man from the workhouse who had tramped from Scotland, where he had been in contact with small-pox, and consequently had been detained there for three weeks in quarantine. The fourth, on October 27th, also from the workhouse, was a man who had been working at Heysham for about a week, previously tramping from Bolton. The fifth case, on December 22nd, was a man in a common lodging-house. This man had been to Garston looking for work, and had returned to Lancaster seven days before the disease became apparent. All the cases were removed to hospital, and in the first and fifth cases the

wives and children were also removed, isolated, and vaccinated. Scarlet fever again had an extensive prevalence, 173 cases being notified, but only 2 had a fatal termination. Most of the attacks took place in March, May, and November, and the wards seriously affected were John O'Gaunt, Scotforth, and St. Anne's. For the third successive year diphtheria has been epidemic; the total number of cases notified during the three years gave a case mortality of 236·31 per 1,000. The cases notified in 1900 numbered 118; in 1901, 134; and in the year under review 95. Sixteen of the latter number proved fatal. It is gratifying to be able to report that this extremely fatal disease is less prevalent than in the previous two years. Dr. Parker says he has been unable to discover any special cause for the continuance of the disease which he reports is in all probability due to climatic conditions favourable to the growth of the diphtheria bacilli which has found a suitable nidus." The use of antitoxin serum continues to increase, 58·03 per cent. of the cases were so treated in 1900, 73·88 in 1901, and 75·78 in 1902. The fatality of the disease has also decreased, the percentage of fatal cases being 33·03 in 1900, 21·64 in 1901, and 16·84 in 1902. Typhoid fever contributed 61 cases 7 deaths, typhus fever 1 case, erysipelas 35 cases, puerperal fever 5 cases, and chicken-pox 83 cases. The latter disease was made notifiable twice during the year, in May, June, and July and again in October, November, and December.

Hospital Accommodation.—The thirty-two beds provided in the hospital were used for the isolation of 150 cases, viz., scarlet fever 110 (or 63 per cent. of the total notifications), typhoid fever 35 (or 56 per cent.), and small-pox 5.

Disinfection.—The steam apparatus was put into operation for the disinfection of 3,157 articles. Houses are disinfected by means of formaldehyde, perchloride of mercury, &c.

Water Supply is excellent, and now that the new reservoir is in full working order the supply is continuous and plentiful.

Sewerage, Scavenging, &c.—The water-carriage system is generally adopted, the sewage being conveyed to the estuary of the Lune without previous treatment. Complaints of offensive smells from the sewer ventilators in the streets have drawn attention to the fact that in certain parts some other method of sewer ventilation is required. The Corporation officials supervise scavenging. A refuse destructor is provided.

Sanitary Inspection.—House-to-house visitation has been systematically carried out. Bakehouses, 55 in number, gave satisfaction, and dairies and cowsheds are described as “fair.” The public and private slaughter-houses have been kept under supervision, and attention is paid to 642 premises on the register of factories and workshops. The examination of 63 canal boats revealed 3 infringements of the Act. Forty-three seizures of unsound or diseased food were made, all the articles being condemned and destroyed. The Inspector (Mr. Smith) gives details of a large amount of sanitary work accomplished, including 441 ashpits repaired or improved, 373 drains repaired, 255 drains tested, 57 back yards paved or made satisfactory, 275 defective spouts repaired, 525 defective water closets remedied, 36 stagnant accumulations removed, &c. Smoke nuisances dealt with numbered 59.

Port of Lancaster.—The population of the Port remains the same as at the recent Census, viz., 109. During the year no deaths or births have been registered. No case of zymotic disease has been notified or otherwise come to the knowledge of the sanitary officials. The total number of vessels entering the Port was 221, having a total tonnage of 38,515 tons, and total hands 1,786. Of the vessels entering the Port 179 were engaged in the home trade, and 42 in the foreign trade. The water supply for the vessels still remains the same, *i.e.*, unsatisfactory. Regular inspections of the vessels take place, not only to detect sanitary defects, but also in order to find out if any cases of infectious disease are aboard.

Lathom and Burscough.—(Area in acres, 13,660; Estimated Population, 7,202.)—*Medical Officer of Health*, J. G. LAING, L.R.C.P.I.; *Salary*, £50.

Per 1,000 of Population.	1902.	1901.	Mean of 10 years, 1892-1901.
Birth-rate.....	29·4 ...	31·4 ...	32·7
Death-rate	17·4 ...	15·3 ...	16·1
Zymotic death-rate.....	1·80 ...	1·54 ...	2·15
Phthisis ,,	0·83 ...	0·84 ...	0·92
Respiratory ,,	3·33 ...	1·54 ...	2·89
Rate of deaths under 1 year to 1,000 births.....	150 ...	147 ...	138

As compared with last year the birth-rate shows a decrease of 2·0 per 1,000, and the general death-rate an increase of 2·1. The zymotic, respiratory, and infant rates are all less favourable. Measles was prevalent in the latter half of the year, but more especially in October and November; fortunately, only 3 deaths took place from this cause. School closure was resorted to as a precautionary measure. Diarrhœa gave rise to 4 deaths, but whooping cough did not cause a single fatality. One case of small-pox occurred—a young woman who had visited an infected house in Liverpool. She was promptly removed to hospital. Re-vaccination of all known contacts took place, and the house where the patient resided was thoroughly fumigated. Scarlet fever, with 44 cases 3 deaths, was fairly prevalent during the whole year, but May and June produced the most attacks. In consequence of this disease one school was closed for a period of 24 days. Typhoid fever contributed 11 cases 1 death, diphtheria 8 cases 2 deaths, erysipelas 7 cases, and puerperal fever 1 case.

Hospital Accommodation.—During the first half of the year cases were sent to the West Lancashire Rural District Council's hospital at Aughton, but now this district is amalgamated with Ormskirk for hospital purposes. The joint hospital consists of 10 beds, and it is the intention of the joint Councils

to increase the accommodation in the near future. A small hospital (8 or 9 beds) is also provided for the treatment of small-pox cases. During the year 21 cases received hospital isolation, viz., small-pox 1, scarlet fever 14, typhoid fever 5, and diphtheria 1.

Disinfection.—A Thresh steam apparatus is available. Houses are fumigated with sulphur.

Water Supply good and abundant, obtained from the red sandstone at the western end of Burscough. The mains have recently been considerably extended.

Sewerage, Scavenging, &c.—The sewerage scheme is now completed, and the work of connecting house drains to the main sewers is rapidly being accomplished. Sewage is treated in bacteria beds followed by land filtration. The outlying district of Westhead has a separate purification plant—precipitation and filtration. Scavenging, as performed by contract, gives satisfaction; the refuse being used for agricultural purposes.

Sanitary Inspection.—Six houses were condemned as unfit for human habitation. Bakehouses are clean and in good condition, and slaughter-houses, with one exception, are fairly well kept. The premises referred to were condemned as a slaughter-house, but have since been put in a proper state of repair. Dairies and cowsheds are inspected occasionally; many of the old structures do not comply with sanitary requirements, but new buildings are made to conform with the regulations. Under the Factory and Workshop Act 14 notices were served, and all complied with. Canal boats examined numbered 19, and no cause for complaint was discovered. The Inspector (Mr. Darby) served 27 notices and secured the abatement of 72 nuisances. No smoke observations were taken.

Lees.—(Area in acres, 203; Population, Census 1901, 3,621).
Medical Officer of Health, WM. STANFIELD, M.D.; *Salary*,
 £20.

Per 1,000 of Population.	1902.	1901.	Mean of 10 years, 1892-1901.
Birth-rate.....	23·4 ..	27·3 ...	28·1
Death-rate	19·3 ...	16·8 ...	20·0
Zymotic death-rate.....	1·65 ...	1·10 ...	1·89
Phthisis ,,	1·38 ...	1·10 ...	1·68
Respiratory ,,	4·41 ...	2·76 ...	3·57
Rate of deaths under 1 year to 1,000 births.....	176 ...	151 ...	190

The statistics are marked by a decrease in the birth-rate, equal to 3·9 per 1,000 of the population, and an increase in the death-rate of 2·5 as compared with last year. The zymotic rate rose 0·55, and the proportion of infant deaths to 1,000 births was 176, as against 151. The latter rate is, no doubt, influenced by the lamentable ignorance shown by parents as to the care necessary for the proper bringing up of young children. Two deaths were registered as due to whooping cough, but measles and diarrhœa did not cause any deaths. Scarlet fever, however, had an unusual prevalence; the cases (72 in number) were distributed throughout the year, 44 occurring during the third quarter. Fortunately only one death resulted. School closure was resorted to, and, amongst other measures, handbills of instruction were widely distributed. Diphtheria was the cause of 5 cases 2 deaths, erysipelas 2 cases, puerperal fever 2 cases, and continued fever 1 death.

* *Hospital Accommodation* is said to be available at Oldham, but, notwithstanding the extensive outbreak of scarlet fever, not a single case was removed.

Disinfection.—Sulphur fumigation is relied upon.

Water Supply of good quality, obtained from Oldham.

Sewerage, Scavenging, &c.—The sewage of this district is conveyed into the sewers of the Oldham Corporation. Scavenging is satisfactorily performed by contract.

Sanitary Inspection.—Three notices were served to cleanse and limewash slaughter-houses. Factories and workshops, on the whole, gave satisfaction. The Inspector (Mr. Liversage) secured the abatement of 18 nuisances. Form C has again not been supplied.

Leigh (Borough).—(Area in acres, 6,358; Estimated Population, 41,000.)—*Medical Officer of Health*, J. KING, M.B.; *Salary*, £120.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate.....	34·6	...	33·5	...	36·4
Death-rate	16·1	...	17·4	...	20·5
Zymotic death-rate.....	1·58	...	3·17	...	4·04
Phthisis ,,	1·14	...	1·04	...	1·25
Respiratory ,,	3·95	...	3·37	...	4·49
Rate of deaths under 1 year to 1,000 births.....	133	...	165	...	187

The mortality statistics under review compare very favourably with the averages of the decennial period 1892-1901. The general death-rate and zymotic rate—which are the lowest recorded during the past 10 years—show decreases of 4·4 and 2·46 per 1,000 of the population respectively, and the rate of deaths under 1 year to 1,000 births is—with the exception of 1894—the lowest recorded. The highest death-rate was attained in St. Joseph's Ward (21·47), and the lowest in St. Paul's Ward (12·06). Measles and whooping cough, with 6 and 2 deaths respectively, did not give rise to so much trouble as in the previous year, when the fatalities were 11 and 13. The death-rate from diarrhoea is very much below the average of previous years, only 29 deaths being recorded as compared

with 84 last year, and 111 in 1900. The deaths from enteritis, however, rose from 15 in 1901 to 31 in the year under report, and Dr. King is of opinion that many of these were in reality due to diarrhœa; the discrepancy arises from the want of uniformity in death certification. Even if all the deaths referred to enteritis were included under the heading of diarrhœa, the comparison with the number for previous years would still be very favourable. Small-pox gave rise to 3 cases. On August 25th information was received from Bolton that a pedlar belonging to Leigh had been admitted into hospital suffering from small-pox of 4 days' duration, and that on the two previous nights he had slept at a lodging-house in this district. The bedding, &c., at the lodging-house was destroyed, and the house thoroughly disinfected. On September 9th a case of small-pox occurred in the lodging-house referred to, and on the 12th a second case broke out at another lodging-house. Both these patients had been in contact with the man isolated at Bolton. On the 30th October the deputy at the latter lodging-house was attacked. All three cases were promptly removed to hospital at Astley, and the usual precautions taken. Scarlet fever was prevalent throughout the year, and gave rise to 198 cases and 10 deaths against 98 cases and 6 deaths in the previous year, and on several occasions cases of infectious disease could not be removed to the sanatorium for want of accommodation. Typhoid fever contributed 49 cases 13 deaths (34 cases 8 deaths in 1901), diphtheria and membranous croup 13 cases 5 deaths (25 cases 5 deaths in 1901), and erysipelas 30 cases. The voluntary notification of phthisis has been put into operation, but only 15 cases were reported.

Hospital Accommodation is provided at the joint sanatorium at Astley. One hundred and thirty cases were removed viz., small-pox 3, scarlet fever 97, and typhoid fever 30. The Joint Board have just erected a small-pox hospital at Astley.

Disinfection.—The provision of a more centrally situated

disinfecting apparatus in conjunction with a refuse destructor is under consideration. Houses fumigated numbered 188, including 8 after the occurrence of phthisis.

Water Supply.—Quality good, pressure indifferent.

Sewerage, Scavenging, &c.—Sewage is treated at the works of the Leigh and Atherton Joint Sewerage Board, but the effluent has not so far given entire satisfaction to the Mersey and Irwell Joint Committee. Seven acres of land have been brought into operation for dealing with the storm water, and an area of cinder filter beds has also been constructed. “The removal of nightsoil is still carried on by contract, and the refuse is disposed of to farmers or tipped on the sewage farm. The introduction of covered carts is a great improvement, but the method of removal is still unsatisfactory, and at times gives rise to a serious nuisance and is a constant source of danger to the public health.” Would not this work be much better performed by the Corporation?

Sanitary Inspection.—Twenty-four insanitary or dilapidated houses have been demolished. Owing to the continued growth and prosperity of the town the population is increasing at a greater rate than the house accommodation, thus necessarily giving rise to some overcrowding. At the last Census (1901) the average number of persons per house was equal to 5·1 throughout the borough, but an inspection of each ward with special reference to overcrowding show that in many houses a very much larger average is attained, for instance, in St. Mary’s Ward 92 houses had an average number of 8·44 persons per house, 104 houses in St. Paul’s Ward 8·58 per house, 66 in St. Peters’s Ward 8·48 per house, 57 in Lilford Ward 9·37 per house, 93 in Etherstone Ward 8·94 per house, 46 in Hope Carr Ward 9·65 per house, and 83 in St. Joseph’s Ward 7·84 per house. The demand for houses is very urgent, and unless they are built at a greater rate than at the present time overcrowding will become a serious danger to the health

of the community. Bakehouses (48), four of which are underground, are on the whole satisfactory. Slaughter-houses are only described as "fair," but the erection of a public abattoir is under consideration. Dairies, cowsheds, and milkshops have been periodically inspected; general repairs and alterations to farm buildings, &c., were carried out in several instances; and the water supply in four farms has been improved. One farmhouse was demolished as unfit for its purpose. Lodging-houses are in fair order. In view of the overcrowding reported above it was resolved by the Council that steps be taken immediately to provide a municipal lodging-house. Factories and workshops are kept under observation, and 139 canal boats were examined. One hundred and twenty-eight water closets have been substituted for privy middens, and provision has been made in a Bill shortly to be submitted to Parliament for the conversion of privy middens into water closets and the general adoption of the water-carriage system. The amount of food condemned was considerable, viz., beef 14,472 lbs., fish 3,360 lbs. The Inspector served 781 notices to secure the abatement of 650 nuisances. Forty smoke observations were taken.

Levenshulme.—(Area in acres, 606; Estimated Population, 12,500).—*Medical Officer of Health*, H. E. EDLIN, M.R.C.S.; *Salary*, £60 (no claim).

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate.....	30·5	...	31·9	...	26·1
Death-rate	11·2	...	12·9	...	12·7
Zymotic death-rate.....	1·20	..	1·45	...	1·62
Phthisis ,,	0·96	...	0·51	...	1·38
Respiratory ,,	1·28	...	2·05	...	2·17
Rate of deaths under 1 year to 1,000 births.....	91	...	131	...	130

The birth-rate showed a decline of 1·4 per 1,000 as

compared with last year, but exceeded by 4·4 the mean of the 10 years 1892-1901. The general death-rate is below the rate for the previous year and the average of the past decennial period. The zymotic, respiratory, and infant rates are likewise more favourable. The death-rate varied from 14·28 in South-West Ward, 11·87 in South-East Ward, to 10·64 in North-East Ward and 7·90 in North-West Ward. In November an epidemic of measles broke out in North-East Ward, affecting chiefly the children attending St. Mark's school. Fortunately the disease was of a mild type, only 2 deaths resulting. The schools were closed for a period of 3 weeks, and thorough disinfection carried out. Whooping cough was prevalent throughout the year, causing 6 deaths, and diarrhœa—almost absent owing to the low temperature—caused 2 deaths. Scarlet fever gave rise to 19 cases 3 deaths, diphtheria 11 cases 2 deaths, typhoid fever 1 case, erysipelas 4 cases, and puerperal fever 1 case. Bacteriological examinations were made in 9 cases of diphtheria, 6 of which had negative results. As a measure of precaution, owing to the presence of small-pox in neighbouring districts, it was decided to arrange for the temporary notification of chicken-pox, and 14 cases were reported. Voluntary notification of phthisis came into operation at the beginning of the year, and in May the bacteriological examination of sputum in doubtful cases was offered to medical men. Nineteen cases were notified, and in 2 instances examinations of sputum were made.

Hospital Accommodation.—Hitherto cases from the district have been received into the Hyde Corporation hospital, but now patients will be removed to the new joint hospital at Baguley. Eight cases of scarlet fever were treated in hospital during the year.

Disinfection.—Disinfecting apparatus, in conjunction with a refuse destructor, will shortly be provided. Thirty-four houses were fumigated.

Water Supply good, obtained from Manchester Corporation.

Sewerage, Scavenging, &c.—Sewage is conveyed into the Withington sewers. Many complaints were received respecting foul smells from the sewer manholes. In consequence more frequent flushing took place. The brook and dam in Chapel Street have been a constant source of nuisance; action was taken by the Mersey and Irwell Joint Committee to stop the pollution from manufactories, and it is proposed to culvert the stream as soon as the necessary powers can be obtained. Scavenging is performed in a satisfactory manner by the Authority.

Sanitary Inspection.—Thirteen houses were closed as unfit for human habitation. Bakehouses, including three underground, are fairly well conducted, and the slaughterhouses, 4 in number, give satisfaction. Dairies and cowsheds are, as a whole, kept clean and in good condition; in 2 structural alterations were carried out. Visits to factories and workshops, amounting to 192, resulted in several improvements. The Inspector reports on 192 nuisances abated after the service of 197 notices. In 2 instances legal proceedings were successfully instituted. Two smoke observations were taken.

Leyland.—(Area in acres, 3,725; Population, Census 1901, 6,865).—*Medical Officer of Health*, E. BERRY, L.F.P.S.G.; *Salary*, £30.

Per 1,000 of Population.	1902.	1901.	Mean of 10 years, 1892-1901.
Birth-rate.....	24·1 ...	24·9 ...	29·2
Death-rate	15·7 ...	15·7 ...	18·2
Zymotic death-rate.....	0·43 ...	1·74 ...	1·69
Phthisis ,,	1·01 ...	0·43 ...	1·61
Respiratory ,,	3·78 ...	2·03 ...	3·76
Rate of deaths under 1 year to 1,000 births.....	198 ...	105 ...	177

The birth-rate is the lowest recorded during the last 10

years, and the general death-rate is 2·5 per 1,000 below the mean of that period. A low zymotic rate prevailed, but the rate of deaths under one year to 1,000 births was very high, and almost double the rate recorded last year when, however, the infant mortality was the lowest ever recorded. Whooping cough gave rise to 3 deaths, and for the sixth year in succession not a single fatality was ascribed to measles. The notifications numbered 33 against 211 in 1901. Of these scarlet fever contributed 24 cases against 188 in the previous year. Erysipelas gave rise to 6 cases, and typhoid, typhus, and puerperal fevers 1 case each.

Hospital Accommodation.—Fourteen cases of scarlet fever were removed to the Chorley, &c., joint isolation hospital at Heath Charnock.

Disinfection.—No apparatus.

Water Supply good but hard. The hardness is now being removed, and for that purpose three tanks, each of a capacity of 50,000 gallons, having been laid down.

Sewerage, Scavenging, &c.—The sewage works are being extended by the addition of two precipitation tanks, sludge pits, &c. Scavenging is carried out by the Authority, the method of ashpit emptying being more satisfactory than formerly.

Sanitary Inspection.—The house accommodation of the district has much improved during recent years. Bakehouses and slaughter-houses receive periodical inspection and are reported as clean. Little or no attention is paid to dairies and cowsheds, and regulations have not yet been adopted. A certain amount of overcrowding occurred at the lodging-houses. Frequent visits are made to the factories and workshops. Nineteen notices were served for the abatement of nuisances, and all were complied with.

Litherland.—(Area in acres, 857 ; Estimated Population, 12,280).—*Medical Officer of Health*, BENJ. SUMNER, M.D. ; *Salary*, £35 (no claim).

Per 1,000 of Population.	1902.	1901.	Mean of 10 years. 1892-1901.
Birth-rate.....	33·6 ...	38·2 ...	35·1
Death-rate	15·7 ...	15·2 ...	14·7
Zymotic death-rate.....	2·03 ...	3·49 ...	2·78
Phthisis ,,	0·73 ...	0·94 ...	0·94
Respiratory ,,	3·42 ...	3·11 ...	2·82
Rate of deaths under 1 year to 1,000 births.....	150 ...	183 ...	167

The estimated population is 1,688 more than the Census enumeration. This large increase is due to the many commercial undertakings which have been commenced ; Dr. Sumner says the character of the district is altering from “urban and agricultural to urban and manufacturing.” During the last intercensal period the increase in population amounted to 138 per cent. As compared with last year the birth-rate declined 4·6 per 1,000, and there was a fractional increase in the general death-rate. The zymotic, phthisis, and infant rates were more favourable. A somewhat widespread epidemic of measles occurred in September, October, and November, causing 4 deaths ; as the disease was also prevalent in the surrounding districts the managers of the local public elementary school were interviewed and requested to take every precaution. Diarrhoea, although not very prevalent owing to the absence of hot weather, caused 8 deaths, and 2 deaths were ascribed to whooping cough. Small-pox gave rise to 4 cases ; all occurred as separate outbreaks, and were due to direct contact with contagion. Prompt removal to hospital took place in every instance, and, fortunately, no further cases followed. Scarlet fever with 69 cases 4 deaths was present throughout the year, but May and December produced the majority of the attacks. Typhoid fever was responsible for 24 cases 4 deaths, diphtheria

and membranous croup 16 cases 2 deaths, erysipelas 15 cases, and typhus fever 1 case 1 death. The latter case, which was of a very virulent type, was at once removed to hospital where death took place; unfortunately, the ambulance attendant who removed the case contracted the disease and also died.

Hospital Accommodation.—The Bootle Corporation hospital at Linacre is available, and 43 cases were removed, viz., small-pox 4, scarlet fever 21, typhoid fever 8, typhus fever 1, and diphtheria 9.

Disinfection.—The question of providing an up-to-date disinfectors is under consideration, estimates and plans being in hand. One hundred and nine rooms were fumigated with sulphur after infectious disease, and 2 after phthisis.

Water Supply good, obtained from Liverpool Corporation.

Sewerage, Scavenging, &c.—Sewage is discharged into the River Mersey. Additional sewer ventilating shafts are about to be erected. The scavenging, which is undertaken by contract, is well performed.

Sanitary Inspection.—Bakehouses, slaughter-houses, and dairies and cowsheds—under constant supervision—are, as a whole, in good condition. Factories and workshops were also regularly inspected; during the year many sanitary defects received attention, and in some instances additional w.c. accommodation was provided. Canal boats passing through the district undergo examination. Two hundred and nine privy middens were converted to the water-carriage system, and 369 ash-pits have been covered. All the remaining privies are under notice for conversion, and it is hoped that the work will be completed before the summer of 1903. Many back streets and passages were paved, flagged, and drained. The Inspector (Mr. Carter) served 361 notices for the abatement of nuisances. “Continuous” smoke observations are taken.

Littleborough.—(Area in acres, 7,853; Estimated Population, 11,257).—*Medical Officer of Health*, G. A. PITCAIRN, M.B.; *Salary*, £50.

Per 1,000 of Population.	1902.	1901.	Mean of 10 years, 1892-1901.
Birth-rate.....	22·4 ...	21·3 ...	22·1
Death-rate	14·3 ...	18·5 ...	15·2
Zymotic death-rate.....	0·97 ...	0·62 ...	0·98
Phthisis ,,	1·59 ...	1·70 ...	1·22
Respiratory ,,	2·13 ...	3·67 ...	3·30
Rate of deaths under 1 year to 1,000 births.....	122 ...	147 ...	131

The birth-rate shows an increase of 1·1 per 1,000 as compared with last year, and the general death-rate declined 4·2. The zymotic rate, although 0·35 above the average for 1901, was almost identical with the mean of the preceding decade. The infantile mortality showed a satisfactory diminution. Measles prevailed in epidemic form from April to September; the greatest prevalence being attained from May to July when it was thought advisable to close four of the schools. Fortunately there were only 3 deaths, two of which occurred in children under the age of one year. Whooping cough was the cause of 4 deaths. Small-pox gave rise to 3 cases, one in each of the months of January, February, and December. Scarlet fever caused 28 attacks, the majority of which occurred from January to July. Typhoid fever contributed 3 cases 2 deaths, diphtheria 8 cases 1 death, continued fever 2 cases 1 death, and erysipelas 2 cases.

Hospital Accommodation.—Much delay has taken place in the matter of the proposed joint hospital.

Disinfection is carried out by dry heat.

Water Supply.—The majority of the houses are supplied by the Rochdale Corporation, and, except in some of the outlying parts where complaints as to turbidity are made, the

supply is very good. There are still some private supplies; the water from 11 of these sources has, during the year, been analysed, and 3 were found to be contaminated. In these cases steps have been taken to obtain a better supply.

Sewerage Scavenging, &c.—Sewage is treated by precipitation and filtration and the effluent as a rule is good. On one occasion, however (July), the Mersey and Irwell Joint Committee complained of the unsatisfactory character of the effluent. The Authority's employees efficiently carry out scavenging, the refuse being disposed of for agricultural purposes.

Sanitary Inspection.—Bakehouses—30 in number—appear to be, on the whole, in good condition. Slaughter-houses are kept under constant supervision; in four instances notices had to be served on account of neglect regarding the proper cleansing of the premises, and at one slaughter-house the Council ordered the floor to be reflagged and cemented. The common lodging-houses are well kept. Dairies and cowsheds—inspected twice a year—are clean and well ventilated and subject to regulations. Factories and workshops as a rule comply with sanitary requirements, but in some the closet arrangements are not quite satisfactory. Fifty-eight privy middens were converted to the tub system. Forty-three canal boats underwent examinations, and no serious infringements of the Act were discovered. The Inspector served 187 notices for the abatement of nuisances and all were complied with. In one instance legal proceedings had to be instituted before the necessary work was carried out. Smoke observations numbered 48, and the time limit—eight minutes per hour—was exceeded on 7 occasions. Legal proceedings were taken in one case where black smoke was emitted for $19\frac{1}{2}$ minutes in the hour and the magistrates dismissed the case after the defendant had acknowledged the offence.

Little Crosby.—(Area in acres, 1,903; Estimated Population, 572.)—*Medical Officer of Health*, E. BUXTON, M.D.; *Salary*, £10 10s. (no claim).

Per 1,000 of Population.	1902.	1901.	Mean of 10 years, 1892-1901.
Birth-rate.....	20·9	19·5	16·4
Death-rate	6·9	7·1	8·7
Zymotic death-rate.....	nil.	nil.	0·31
Phthisis „	nil.	1·77	0·80
Respiratory „	nil.	nil.	1·66
Rate of deaths under 1 year to 1,000 births.....	nil.	nil.	92

During the year under review 12 births and 4 deaths were registered. Of the latter 2 were ascribed to heart disease, one to undescribed causes, and the fourth was that of a man belonging to Bootle who was found drowned. This is the eighth consecutive year without a death from any of the principal zymotic diseases. No notifications of infectious disease were received.

Hospital Accommodation nil.

Disinfection.—Houses and infected clothing are disinfected (when required) by the Great Crosby officials by arrangement.

Water Supply obtained from Liverpool Corporation.

Sewerage, Scavenging, &c.—Sewage is treated in settling tanks, the sludge being used for agricultural purposes. Scavenging, in the hands of the Authority, is efficiently performed.

Sanitary Inspection.—There are no bakehouses, slaughter-houses, or lodging-houses within the district. Dairies and cowsheds are in fair condition. Considerable alterations and improvements at one of the dairy farms have just been made. Several nuisances of a minor character were remedied.

Little Hulton.—(Area in acres, 1,699 ; Population, Census 1901, 7,294).—*Medical Officer of Health*, J. H. MARSH, L.R.C.P. ; *Salary*, £30.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate.....	33·3	...	30·8	...	33·2
Death-rate	13·4	...	14·3	...	17·6
Zymotic death-rate.....	1·64	...	2·46	...	2·42
Phthisis ,, 	1·23	...	1·09	...	0·92
Respiratory ,, 	3·42	...	1·91	...	4·85
Rate of deaths under 1 year to 1,000 births.....	102	...	120	...	161

The birth-rate is fractionally above the average, and the general death-rate and the proportion of deaths of infants under 1 year to births are the lowest recorded during the 10 years 1892-1901. The zymotic rate also, with one exception (1894), is lower than in any year of the same period. Dr. Marsh, in referring to the low infantile mortality, remarks :—“ I trust for even better results in the future, now that parents are being made aware of the great necessity of personal cleanliness, sanitary surroundings, and the proper feeding, clothing, &c., of young children.” There was an epidemic of measles from May to September, and in consequence several of the schools were closed. Though a great many children were affected, one case only was fatal, the disease being of a mild type. Nine deaths were ascribed to diarrhoea. Scarlet fever—prevalent in the later months of the year—gave rise to 35 cases. Diphtheria, associated with membranous croup, contributed 14 cases 1 death ; most of the attacks took place in the Worsley Road district, where in many instances the house drains were found defective and the closets in foul condition. Typhoid fever was the cause of 9 cases 1 death, erysipelas 5 cases, and puerperal fever 1 case. The voluntary notification of phthisis has been adopted, and 4 cases were reported. The Medical Officer of Health says he hopes the time is not

far distant when this district, perhaps in combination with others, may have a sanatorium for the treatment of this disease.

Hospital Accommodation.—Eighteen cases were removed to the joint hospital at Farnworth, viz., scarlet fever 13, diphtheria 4, and typhoid fever 1. Provision has been made by the Joint Hospital Board for the treatment of small-pox cases.

Disinfection.—Houses are fumigated by sulphur, and bedding, clothing, &c., undergo disinfection in the steam apparatus at the hospital.

Water Supply satisfactory both as regards quality and quantity.

Sewerage, Scavenging, &c.—Sewage is treated in septic tanks and on bacteria beds. Scavenging is “fairly” well carried out by the contractors.

Sanitary Inspection.—One house was closed as unfit for human habitation. Dairies, cowsheds, and slaughter-houses receive regular inspection; some improvements have been made, but much remains to be done to put these places in proper sanitary condition. The wooden erections in Grosvenor Street, used as shippens, stables, &c., were found to be unfit for their purpose, and demolished. Several notices were served relating to bakehouses, and one was closed as unsuitable for the business carried on. Forty-nine closets and privy middens were reconstructed; there are still a large number of these which require attention. The Inspector (Mr. Davies) served 110 preliminary and 70 formal notices, and as a result secured the abatement of 150 nuisances. In 12 instances legal proceedings were instituted, and in each case an order was obtained.

Little Lever.—(Area in acres, 808 ; Estimated Population, 5,150.)—*Medical Officer of Health*, J. S. PICKFORD, M.R.C.S.; Salary, £20.

Per 1,000 of Population.	1902.	1901.	Mean of 10 years, 1892-1901.
Birth-rate.....	27·5 ...	28·9 ...	30·1
Death-rate	12·2 ...	20·9 ...	18·7
Zymotic death-rate.....	2·13 ...	5·27 ...	2·95
Phthisis ,,	0·38 ...	0·78 ...	1·13
Respiratory ,,	2·33 ...	4·88 ...	4·14
Rate of deaths under 1 year to 1,000 births.....	112 ...	209 ...	182

The mortality statistics are marked by a great reduction in all the averages as compared with the previous year; the death-rate declined 8·7 per 1,000 of the population, the zymotic rate 3·14, phthisis rate 0·40, respiratory rate 2·55, and the proportion of infant deaths to 1,000 births was 112 as against 209. The general death-rate and the infant rate were the lowest recorded during the last 10 years. The deaths from diarrhoea declined from 11 in 1901 to 4 in the year under review. Measles and whooping cough each caused 1 death. Scarlet fever of a mild type was rather prevalent during January and February, and diphtheria, including membranous croup, assumed serious proportions in May, June, July, and August. The former disease gave rise to 36 cases 1 death, and the latter 37 cases 4 deaths. Typhoid fever contributed 5 cases, erysipelas 24, and phthisis—which is notified voluntarily—4 cases.

Hospital Accommodation is provided at the joint hospital at Farnworth, and the Joint Board have recently erected a pavilion for the isolation of small-pox cases. Seven cases were removed during the year—6 scarlet fever and 1 typhoid fever.

Disinfection.—Steam apparatus at hospital available.

Water Supply, obtained from the Bury Joint Board, is of good quality, but at times shows the want of filtration.

Sewerage, Scavenging, &c.—Sewage is treated by chemical precipitation and filtration. On one occasion (July) the Mersey and Irwell Joint Committee was not satisfied with the character of the effluent. Scavenging has been efficiently done by the Council's workmen. Dr. Pickford calls attention to the insanitary state of Mytham Road and Boscow Road; "both are unpaved, and during wet weather get into an abominable state, and at times are practically impassable to pedestrians."

Sanitary Inspection.—Bakehouses are clean and well kept, and the same may be said regarding slaughter-houses and factories and workshops. Dairies and cowsheds have been regularly visited; one cowshed was rebuilt, and the attention of the owners has been called to those which do not conform to the regulations. Canal boats undergo inspection. During the year 37 privy middens were converted to the waste-water system. The Inspector served 58 notices, and as a result 44 nuisances were abated.

Little Woolton.—(Area in acres, 1,389; Population, Census 1901, 1,091.)—*Medical Officer of Health*, C. STUART PETHICK, M.B.; *Salary*, £20.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years 1892-1901.
Birth-rate.....	22·9	...	16·4	...	20·0
Death-rate	9·1	...	9·1	...	9·8
Zymotic death-rate.....	nil.	...	nil.	...	0·79
Phthisis ,,	1·83	...	nil.	...	1·40
Respiratory ,,	0·91	...	nil.	...	1·05
Rate of deaths under 1 year to 1,000 births.....	160	...	111	...	131

The birth-rate shows an increase of 6·5 per 1,000 of the

population as compared with 1901, and the death-rate continues remarkably low. The infant mortality is above the average of previous years, but three out of a total of four deaths under one year were of children prematurely born. No deaths were registered as due to the principal zymotic diseases, and only 6 notifications were received, viz., scarlet fever 4, typhoid fever 1, and erysipelas 1.

Hospital Accommodation.—One bed is reserved at Whiston sanatorium but was not used during the year.

Disinfection.—No apparatus. Houses fumigated with sulphur.

Water Supply good, obtained from Liverpool Corporation.

Sewerage, Scavenging, &c.—"The sewage farm has worked satisfactorily, and the sewers have been frequently flushed." Scavenging receives attention at the hands of the Authority.

Sanitary Inspection.—Only two notices were served—one to prevent overcrowding of dwelling-houses and one to provide a proper water supply. Slaughter-houses and dairies and cow-sheds are described as satisfactory.

Longridge.—(Area in acres, 3,285; Population, Census 1901, 4,304).—*Medical Officer of Health*, GEO. JUKES, L.R.C.P.; *Salary*, £20.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate.....	29·0	...	29·2	...	30·0
Death-rate	16·4	...	20·4	...	19·6
Zymotic death-rate.....	0·69	...	1·85	...	2·10
Phthisis ,,	1·62	...	0·69	...	1·76
Respiratory ,,	2·32	...	3·02	...	4·08
Rate of deaths under 1 year to 1,000 births.....	128	...	174	...	172

The birth and death rates are below the average; the

latter—excepting 1898 (16·4) and 1899 (15·5)—is the lowest recorded. The zymotic and infant rates are also—with one exception—lower than any previous year. The district has been unusually free from measles, but whooping cough prevailed somewhat extensively during the early summer and was responsible for 3 deaths. Scarlet fever was very prevalent during the months of January and February, and did not entirely disappear from the district until the end of September; the 47 cases were of an exceptionally mild character, and no death resulted. The remaining notifications were two cases of erysipelas.

Hospital Accommodation.—The joint hospital is in course of erection.

Disinfection.—No apparatus; 49 houses were fumigated with sulphur.

Water Supply, obtained from the Preston Corporation, has been plentiful, and, on the whole, better in quality than in previous years, but unfortunately it is badly filtered.

Sewerage, Scavenging, &c.—The new filters at the sewage works were brought into operation at the middle of the year. The Ribble Joint Committee several times complained of the unsatisfactory character of the effluent. Many house drains which hitherto discharged direct into a watercourse have now been connected to the main sewers. Scavenging is efficiently performed by the Authority. Refuse is tipped into a disused quarry.

Sanitary Inspection.—Bakehouses (2) and slaughterhouses (2) comply with sanitary requirements, and dairies and cowsheds (12) are said to be in good condition, but some of the latter show a deficiency of air space. It is to be regretted that dairy, &c., regulations have not yet been adopted. Notices served for the abatement of nuisances amounted to 112, and all were complied with.

Lytham.—(Area in acres, 2,464; Estimated Population, 7,500.)—*Medical Officer of Health*, J. C. FISHER, M.A., M.B.; *Salary*, £100.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years 1892-1901.
Birth-rate.....	19·3	...	20·1	...	19·2
Death-rate	16·6	...	14·7	...	13·3
Zymotic death-rate.....	0·93	...	1·25	...	0·76
Phthisis „	1·20	...	0·97	...	1·27
Respiratory „	1·60	...	1·80	...	2·06
Rate of deaths under 1 year to 1,000 births.....	179	...	144	...	137

The birth-rate gave a fractional decrease as compared with last year, while the general death-rate rose from 14·7 to 16·6. This latter rate includes the deaths of 11 visitors—excluding these the rate would be equal to 15·2 per 1,000 of the population. The zymotic rate shows a satisfactory diminution, but the infantile mortality is well above the average of previous years. A mild outbreak of measles occurred in February, and in consequence the infant department of one of the schools was closed for 14 days. The result of the closure was most satisfactory, as no fresh case appeared after the re-assembling of the scholars. One death was due to the disease referred to, and diarrhœa and whooping cough also each caused 1 death. Scarlet fever gave rise to 47 cases 1 death, no less than 40 of the cases occurring during the first five months of the year. Typhoid fever contributed 9 cases 3 deaths. No definite cause could be assigned for the outbreak in three cases; in two the disease was probably imported; in two others the cause was attributed to the opening up of a sewer and putting down a flushing tank; one was due to consuming uncooked shellfish, and the remaining case was so mild and so short that there was some doubt as to the accuracy of the diagnosis. Only 1 case of diphtheria was notified; 2 cases were ascribed to erysipelas.

Hospital Accommodation.—The new joint hospital at Moss Side was opened on April 14th, and has proved of great value to the district. Eight cases of scarlet fever, 6 of typhoid fever, and 1 case of diphtheria were removed.

Disinfection.—The hot air apparatus was used for the disinfection of 2,079 articles. One hundred and twenty-nine rooms were fumigated after infectious disease. The Council offer to disinfect, free of charge, rooms which have been occupied by phthisical patients.

Water Supply, obtained from the Fylde Water Board, has been adequate in quantity, and as regards quality it remains good.

Sewerage, Scavenging, &c.—Sewage from the greater part of the district is pumped into a reservoir and discharged into the estuary shortly after high water. The sewage from the west end is also turned into the sea. A considerable extension of the public sewers in the South-West ward has taken place, and several flushing tanks have been constructed. Additional sewer ventilating shafts have also been erected. The clearing of the Liggard Brook from sewage pollution should remove what has been of late years a serious nuisance. The smoke test has been applied to 197 house drains, and in many instances defects were discovered. Scavenging is carried out in a satisfactory manner by the Authority, the refuse being burnt in the destructor.

Sanitary Inspection.—The slaughter-houses do not give satisfaction, and the Council are considering the advisability of replacing them by modern buildings in a more suitable locality. Dairies and cowsheds are receiving more attention than formerly, the Council having determined to enforce the regulations adopted last year. All workshops and workplaces have been visited and found generally in a good sanitary condition as regards cleanliness, air space, ventilation, and sanitary conveniences. A few notices were served, and their requirements

carried out. The privies and ashpits are being replaced by water closets and portable dustbins. The 487 nuisances abated required a like number of notices, either verbal or legal. Three smoke observations were taken.

Middleton (Borough).—(Area in acres, 4,775 ; Population, Census 1901, 25,178.)—*Medical Officer of Health*, WILLIAM GRAHAM, M.D., D.P.H. ; *Salary*, £100.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate	26·5	...	24·1	...	26·2
Death-rate	16·0	...	19·5	...	18·1
Zymotic death-rate.....	1·31	...	1·39	...	1·62
Phthisis ,, 	1·31	...	1·90	...	1·42
Respiratory ,, 	4·21	...	3·21	...	3·79
Rate of deaths under 1 year to 1,000 births.....	122	...	177	...	166

The birth-rate is fractionally higher than the mean of the 10 years 1892-1901, and the death-rate, which is the lowest recorded, is 2·1 per 1,000 below the average. The zymotic, phthisis, and infant rates compare favourably with previous years. Measles was prevalent in the autumn, and necessitated school closure. Eighteen deaths were ascribed to this disease. Whooping cough gave rise to 7 deaths, and diarrhoea 4 deaths. Four cases of small-pox were notified ; the origin of the first case could not be traced, but the second case was brought from Cheshire ; the third was infected by the patient in the second case, and the fourth person attacked worked in Oldham, where the disease had been prevalent for some time, and the disease was probably brought from there. All the patients were removed to hospital as soon as possible, the beds were burned, the houses disinfected, and all the persons living in the houses attacked were vaccinated or re-vaccinated. Scarlet fever gave rise to 53 cases, but no death was attributed to this cause. The disease prevailed mostly at Rhodes village, where 22

cases occurred. Typhoid fever contributed 1 case (fatal), diphtheria and membranous croup 8 cases 3 deaths, erysipelas 30 cases, and puerperal fever 4 cases.

Hospital Accommodation is available at the Marland hospital, belonging to the Rochdale Corporation. Twenty-three cases were removed, viz., small-pox 4, scarlet fever 17, and diphtheria 2 cases.

Disinfection.—Owing to the difficulty of obtaining a site, the Council have not yet been able to provide a steam disinfecter, but it is hoped a suitable place will shortly be obtained. Rooms fumigated with sulphur or formalin numbered 270.

Water Supply described as “good.”

Sewerage, Scavenging, &c.—The order of Court obtained by the Mersey and Irwell Joint Committee was, on the application of the Town Clerk, extended for six months to enable the Corporation to forward an amended sewage scheme for the outlying districts to the Local Government Board. The offensive condition of the river running through the town and of certain mill lodges again occasioned serious complaint. Scavenging, principally undertaken by the Authority, is “fairly” well performed, but better arrangements might be made for removal and deposit of nightsoil. A site has been acquired for the erection of a refuse destructor.

Sanitary Inspection.—Bakehouses, slaughter-houses, and lodging-houses on the whole gave satisfaction. Forty-one visits have been paid to the dairies and cowsheds; the drainage of all the farms visited was in very bad condition. The lighting and ventilation have in several instances been improved, but there is plenty of room for further improvement in this respect. In many instances the cowsheds were in a very dirty condition. One hundred and thirty visits were paid to the 81 workshops, and 143 visits to the 4 common lodging-houses. The examination of 50 canal boats revealed 6 infringements of the Act.

Slop-water closets were substituted for 43 privies. The Inspector (Mr. Morton) gives details of the sanitary work accomplished in his department: 185 preliminary and 38 formal notices resulted in the abatement of 124 nuisances. Ninety-seven smoke observations were taken, and the limit of ten minutes' emission of black smoke per hour was exceeded on 16 occasions; in 7 the offenders were prosecuted, and in the others notices to abate the nuisance were served.

Milnrow.—(Area in acres, 5,198; Estimated Population, 8,260).—*Medical Officer of Health*, JOHN CHADWICK, M.R.C.S.; *Salary*, £40.

Per 1,000 of Population.	1902.	1901.	Mean of 10 years, 1892-1901.
Birth-rate.....	21·3 ...	19·0 ...	19·9
Death-rate	14·5 ...	14·4 ...	15·2
Zymotic death-rate.....	0·60 ...	0·60 ...	1·22
Phthisis ,,	0·72 ...	1·69 ...	1·27
Respiratory ,,	2·66 ...	2·06 ...	3·27
Rate of deaths under 1 year to 1,000 births.....	113 ...	95 ...	141

As compared with the mean of the 10 years 1892-1901, the birth-rate shows an increase of 1·4 per 1,000 of the population, and the death-rate a decrease of 0·7. The former rate was the highest recorded since the year 1893. The zymotic rate—exactly the same as last year—showed a reduction of 0·62 as compared with the mean of the preceding decennial period, and the phthisis, respiratory, and infant rates also were more favourable. The latter rate has only been lower on two occasions during the ten years, viz., last year and in 1894. Measles were prevalent in the early part of the year, and necessitated school closure; fortunately only 1 death took place. Whooping cough did not cause a single death, and only 1 was ascribed to diarrhoea. Scarlet fever—somewhat prevalent in the early months of the year—caused 26 cases 3

deaths, typhoid fever 1 case, diphtheria—associated with membranous croup—5 cases, erysipelas 12 cases, and puerperal fever 1 case.

Hospital Accommodation.—Plans have been prepared for the Joint Isolation Hospital Committee, and it is hoped that building operations will soon commence.

Disinfection.—Houses are fumigated with sulphur, and Fraser's apparatus is used for the disinfection of bedding, clothing, &c.

Water Supply, obtained principally from Rochdale and Oldham, is described as good.

Sewerage, Scavenging, &c.—Sewage is treated by precipitation and subsequent land filtration; the effluent appears to be of a satisfactory character. It is now proposed to construct bacteria beds. Sewers have been considerably extended and almost the whole of the district is now connected up. Flushing takes place monthly. The Authority carry out scavenging in a satisfactory manner; the refuse is used for agricultural purposes.

Sanitary Inspection.—Bakehouses, including 5 underground, were on the whole found to be clean and in good condition, and the same may be said of the six slaughter-houses. Dairies and cowsheds—subject to regulations—are fairly satisfactory. Structural alterations were carried out at 3 of the farms, and to 3 a better water supply was laid on. Factories and workshops came under supervision, and at several the closet accommodation was improved. The Inspector (Mr. Hoyle) served 10 notices and wrote 22 letters requiring the abatement of nuisances, and all were complied with. Forty-two smoke observations were taken; in 7 instances notices had to be issued on account of the time limit—8 minutes per hour—being exceeded.

Morecambe (Borough).—(Area in acres, 1,801 ; Estimated Population, 12,470.)—*Medical Officer of Health*, J. W. WATTERSON, M.B. ; *Salary*, £50 (no claim).

Per 1,000 of Population.	1902.	1901.	Mean of 10 years, 1892-1901.
Birth-rate	18·7	23·3	23·5
Death-rate	14·5	13·1	13·2
Zymotic death-rate	1·36	0·83	1·80
Phthisis ,,	1·28	0·25	0·76
Respiratory ,,	1·76	2·43	2·36
Rate of deaths under 1 year to 1,000 births.....	119	125	146

By a Charter dated 24th June, 1902, this district became a municipal borough. The statistics for the year under review are marked by a decrease in the birth-rate of 4·6 per 1,000 of the population, and an increase of 1·4 in the death-rate as compared with 1901. The zymotic rate was 0·53 higher, but the rate of deaths under 1 year to 1,000 births was slightly more favourable. The phthisis rate showed a considerable increase, but fifty per cent. of the deaths from this disease were of visitors. The general death-rate, after excluding 28 deaths of *bona-fide* visitors to the town, equalled 12·34 per 1,000. Measles gave rise to 5 deaths, 1 in November and 4 in December ; owing to a threatened epidemic of this disease three schools were closed for periods varying from three to four weeks. Diarrhœa was responsible for 2 deaths and whooping cough 1 death. Scarlet fever had an increased prevalence, 89 cases being reported against 52 last year. The wards chiefly involved were Poulton with 32 cases, Torrisholme with 20 cases, and Victoria with 17 cases. The percentage of scarlet fever cases removed to hospital was 88·7 against 94 per cent. last year ; 3 deaths took place in the hospital. Typhoid fever was the cause of 11 cases (1 fatal)—the lowest number notified since 1896. Diphtheria—associated with membranous croup—contributed 25 cases 5 deaths ; “ the

most outstanding feature was that local sanitary defects of one kind or another existed as the probable cause." Dr. Watter-son remarks that "the number of cases is certainly beyond what we ought to expect to have, and I feel sure that as soon as the land, sites of houses, &c., are better drained and sewer- ed, and the present active crusade against plumbing defects continues there will be a marked decline." Of the whole number of diphtheria cases notified 21 were examined bacteriologically, and 19 gave "positive" results and 2 "negative." Erysipelas contributed 10 cases. Information regarding infected houses is supplied to the public libraries and to laundries, and the school attendance officers are also supplied with a list of all infectious cases.

Hospital Accommodation consists of 35 beds and 3 cots. Seventy-nine cases of scarlet fever were treated.

Disinfection.—The Washington Lyons steam apparatus was used 77 times, and 108 houses were fumigated either with formalin or sulphur. Schools are disinfected as required, and the Council undertake free of cost to fumigate rooms, bedding, &c., which have become infected with tubercular or septic matter. The advisability of erecting an up-to-date disinfecting station is under consideration.

Water Supply very good both as regards quantity and quality.

Sewerage, Scavenging, &c.—Sewage is at present discharged untreated into the sea, but septic tanks on the Exeter system are being pushed forward to deal with the sewage previous to its discharge. The sewers are frequently flushed, and all new drains are tested either with smoke or water. The improvement made by the Authority in the method of scavenging in 1901 has been maintained, and the refuse destructor—erected last year—has done "good service."

Sanitary Inspection.—Bakehouses on the whole gave

satisfaction, the exceptions being 4 which required lime-washing, and 3 which had drain openings inside the premises. Slaughter-houses were found in fair condition, but the Medical Officer of Health advises the erection of a public abattoir. Dairies and cowsheds are described thus—"a few very good, some only fair, and some bad." Two hundred and eleven premises were examined under the Factory and Workshop Act and found to be satisfactory as far as regards cleanliness, air space, and ventilation. Forty-five privy middens were abolished and water closets substituted. The Inspector (Mr. Lamb) gives details of 337 nuisances abated. Statistical information and charts are appended to the report respecting meteorological observations which are taken regularly.

Port of Morecambe.—No cases of infectious disease occurred on any vessel arriving at the port. All foreign vessels were inspected on arrival, as well as boats arriving from any infected port. Several verbal notices were given for minor nuisances, and the defects referred to were remedied without any further action.

It is to be regretted that the report for this district is supplied in manuscript.

Mossley (Borough).—(Area in acres, 3,622; Estimated Population, 13,498.)—*Medical Officer of Health*, J. HEALEY, M.B.; *Salary*, £50 (no claim).

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate	20·6	...	23·5	...	22·6
Death-rate	14·8	...	19·4	...	16·5
Zymotic death-rate.....	0·96	...	2·30	...	1·46
Phthisis ,,	0·81	...	0·66	...	1·39
Respiratory ,,	3·03	...	2·52	...	3·15
Rate of deaths under 1 year to 1,000 births.....	107	...	113	...	157

The birth-rate is 2·9 below the rate for last year, and 2·0

less than the mean of the 10 years 1892-1901. A satisfactory reduction in the death-rate took place, equal to 4·6 and 1·7 as compared with 1901 and the previous decade respectively. The zymotic and infant rates were more favourable than for some time past. Scarlet fever caused no death although 26 cases were notified against 156 and 8 deaths in 1901. There was an epidemic of measles in Micklehurst in February necessitating the closing of the schools, and again in Mossley in May; 7 deaths resulted. Diphtheria and membranous croup gave rise to 14 cases 3 deaths, and enteric fever 15 cases 1 death. Four typhoid fever cases occurred in one house where the drain was found to be so defective as to allow the sewage to percolate under the floor of the back kitchen. In all cases defective drains were immediately attended to. It is interesting to note that diphtheria antitoxic serum is supplied at the expense of the Corporation to all medical men. In November 2 cases of small-pox—one ending fatally—occurred. Removal to May Hills isolation hospital promptly took place, and “the other members of both families were vaccinated at once and confined to their houses for a period of 18 days, being kept during that time by the Corporation.” Arrangements have also been made with the lodging-house keepers to acquaint the Medical Officer of Health of any case of sickness which may occur among their lodgers.

Hospital Accommodation.—A scheme is being discussed for providing a joint isolation hospital. The May Hills hospital, which has only accommodation for eight patients, is reserved for the isolation of small-pox.

Disinfection of sick rooms at the termination of illness is carried out by the Inspector chiefly by means of sulphur and carbolic acid, and some are washed with a solution of chlorine. The steam disinfector has been out of use owing to an accident.

Water Supply gives satisfaction.

Sewerage, Scavenging, &c.—The sewage is passed through septic tanks and filter beds with satisfactory results. A considerable amount of new work has been carried out at the Black Rock portion of the works. The whole of the sewage can now be treated, and the beds are arranged for separate working or in conjunction with one another. The scavenging is carried out by the employees of the Council, who deposit the refuse on a “tip.”

Sanitary Inspection.—The town is subject to periodical inspection; nuisances in connection with dwellings such as dampness and defective roofs, dirty houses, defective water supplies, blocked drains in cellars and yards, privy and ashpit defects, and insanitary buildings are well looked after. Bake-houses, slaughter-houses, cowsheds—although not subject to regulations—factories and lodging-houses have all been inspected and where necessary cleansing and limewashing have been done. The Inspector (Mr. Taylor) served 63 notices for the abatement of 242 nuisances of a miscellaneous character, and disinfected 1 public school, 67 houses, 127 rooms, cleaned 272 rooms after infectious disease, &c. No smoke observations were taken.

Moss Side.—(Area in acres, 421; Estimated Population, 27,032.)—*Medical Officer of Health*, S. HOLGATE OWEN, M.D.; *Salary*, £100 (no claim).

Per 1,000 of Population.	1902.	1901.	Mean of 10 years, 1892-1901.	
Birth-rate	17·5 ...	16·9 ...	...	17·0
Death-rate	12·7 ...	13·1 ...	...	12·6
Zymotic death-rate.....	0·85 ...	1·44 ...	...	1·20
Phthisis ,, 	0·92 ...	0·97 ...	...	0·88
Respiratory ,, 	2·77 ...	2·74 ...	...	2·16
Rate of deaths under 1 year to 1,000 births.....	124 ...	155 ...	...	148

Dr. Owen reports that the annual rates as regards

deaths from all causes and from zymotic diseases are exceptionally favourable, whilst the annual death-rate of infants under 1 year per 1,000 births has not fallen to so low a figure during the preceding eleven years. The number of infectious disease notifications amounted to 155, against 294 in the previous year. Scarlet fever gave rise to 116 or 74·8 per cent. of the notified cases, with 6 deaths; whooping cough caused 8 deaths, measles 3, diarrhoea 2, diphtheria 3—out of 19 attacks,—and typhoid fever not a single fatality, although 10 cases came under notice. It is stated that “imperfect isolation contributed largely to the spread of these infectious diseases, especially scarlet fever, the mildness of type rendering its early detection extremely difficult in many instances.”

Hospital Accommodation.—Infected patients are isolated at the Manchester Corporation hospital at Monsall and at the joint hospital opened at Baguley December 10th, 1902. Altogether 79 cases received hospital isolation, viz., scarlet fever 66, diphtheria 9, and enteric fever 4.

Disinfection.—A steam disinfector (Messrs. Goddard, Massey, and Warner) is now in use. Disinfection of premises, bedding, clothing, &c., was carried out by the Sanitary Authority.

Water Supply good, obtained from Manchester Corporation.

Sewerage, Scavenging, &c.—The sewage effluent has not satisfied the Mersey and Irwell Watershed Committee, and a scheme is in preparation for making additional provision for dealing with the sewage and storm water. In consequence of allowing sewage matter to enter the river Mersey from a storm overflow on the 13th of October, summonses were issued against the Council, and on the case being heard a fine of £10 with costs was inflicted. A large number of houses (4,500) are still provided with ash-pits and privies, and it is difficult to scavenge without pollution of the soil and possible injury to

the public health. A refuse destructor has been fully established, and less difficulty is, therefore, experienced in getting rid of ashpit and other offensive refuse.

Sanitary Inspection.—Attention has been paid to house drainage and sanitary defects found in connection with dwelling-houses. It is satisfactory to note that “the nuisance which has arisen on many occasions from the emanations of sewer gas into the streets has been to a large extent abated, the ventilation of the sewers having been improved by increasing the number of ventilating shafts.” There are no private slaughter-houses, consequently little trouble has been experienced in supervising the public premises used for slaughtering. Cowsheds (3), milkshops and dairies (68) have given satisfaction in respect of lime-washing, cleanliness, and ventilation. Careful supervision has also been exercised over factories and workshops, bakehouses (9), laundries (6), &c. The Inspector (Mr. Ainley) served 420 notices, also wrote 85 letters for the abatement of a variety of nuisances, and, although from 50 to 60 smoke observations were taken, it was found necessary to issue only 3 notices under the head of black smoke.

Much Woolton —(Area in acres, 792; Population (Census, 1901), 4,731).—*Medical Officer of Health*, CHARLES V. VEREKER, L.R.C.P.I.; *Salary*, £40.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate	27·0	...	25·9	...	27·4
Death-rate	12·4	...	16·9	...	16·3
Zymotic death-rate.....	1·47	...	3·17	...	1·79
Phthisis ,,	nil.	...	1·47	...	1·81
Respiratory ,,	1·90	...	4·01	...	3·17
Rate of deaths under 1 year to 1,000 births	62	...	130	...	144

The mortality statistics presented by Dr. Vereker compare very favourably with last year, and also with the mean of

the 10 years 1892-1901. As compared with 1901 the general death-rate shows a decline of 4·5 per 1,000 of the population, and the zymotic and infant rates are reduced to less than half. The latter rate is the lowest recorded. The zymotic rate was due to 1 death from measles, 1 from diarrhœa, and 3 deaths from typhoid fever. Infectious disease notifications amounted to 31, viz., scarlet fever 22, typhoid fever 7, diphtheria 1, and erysipelas 1. Cases of phthisis are notified voluntarily by the medical practitioners of the district.

Hospital Accommodation.—Three beds are reserved at the Whiston sanatorium for the use of this district—2 in the ordinary wards and 1 in the small-pox pavilion. The Medical Officer of Health points out in his report that the accommodation is not sufficient, although only 3 cases of typhoid fever were removed during the year under review.

Disinfection.—Fraser's hot air apparatus available. Houses fumigated with sulphur numbered 30.

Water Supply obtained from Liverpool Corporation is now extended to nearly the whole of the houses in the district.

Sewerage, Scavenging, &c.—The sewage of the eastern portion of the district flows to an irrigation farm, and that of the remaining part to the Liverpool sewers. Scavenging—undertaken by the Authority—is carried out satisfactorily, “more attention now being paid to the smaller streets in the worst parts of the township.”

Sanitary Inspection.—Six houses were closed as unfit for human habitation. Bakehouses (4), slaughter-houses (5), and cowsheds (11) are all described as “good.” Workshops receive periodical inspection. The privy middens are gradually being abolished, 22 being converted to water closets during the year. Notices served for the abatement of nuisances amounted to 33, and in each case the requisite work was carried out. Smoke observations numbered 150.

Nelson (Borough.)—(Area in acres, 3,466; Estimated Population, 33,000.)—*Medical Officer of Health*, A. P. MILLAR, M.D.; *Salary*, £80.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate	24·0	...	24·2	...	28·0
Death-rate	11·3	...	13·6	...	14·1
Zymotic death-rate.....	1·84	...	1·12	...	1·72
Phthisis ,,	0·78	...	0·60	...	0·76
Respiratory ,,	1·96	...	3·15	...	3·05
Rate of deaths under 1 year to 1,000 births.....	109	...	142	...	152

A birth-rate 4 per 1,000 less than the mean for the past decade is accompanied by a low death-rate (11·3) as compared with 13·6 last year and 14·1 mean of the 10 years 1892-1901. The death-rate for the first quarter corresponded to 12·9, for the second quarter 11·1, for the third quarter 9·6, and for the fourth quarter 12·2. The rate of infant deaths (109) was exceptionally low and compared favourably with 152, the average of the preceding 10 years. The zymotic rate rose to 1·84 or 0·72 more than last year owing to the unusual prevalence of scarlet fever which caused 269 cases 12 deaths. Diphtheria and membranous croup contributed 29 cases 11 deaths, measles 13 deaths, whooping cough 13 deaths, and small-pox 130 cases 7 deaths. The total notifications, including enteric fever 26 and erysipelas 26, amounted to 480 as compared with 114 last year and 291 in 1900. The spread of small-pox gave rise to considerable alarm, and the accommodation at the temporary hospital had to be supplemented by two corrugated iron buildings. The disease prevailed from 19th February to 28th May, when 77 cases were notified, and from 19th August to 14th November 52 cases appeared, then after a lull of six weeks, on the 28th December, another case was reported. Dr. Millar states that “the only real safeguards—vaccination and re-vaccination—were offered to and accepted by great numbers, and soon there

was a marked diminution in the number of fresh cases." Removal to the hospital took place as far as possible, all contacts were re-vaccinated, houses fumigated, clothing disinfected, and every precaution used to prevent the spread of contagion. Accommodation was also provided for the isolation of families during the disinfection of their own houses after the removal of an inmate to the hospital.

Hospital Accommodation, as above described, for small-pox. No provision made for ordinary infectious cases. Negotiations with Colne (B.) as to a joint isolation hospital are in progress.

Disinfection.—A portable steam disinfecter has been purchased to meet the exigencies of the small-pox outbreak, and used freely. The Local Government Board has also sanctioned the borrowing of money for the establishment of a permanent disinfecting station.

Water Supply.—It is satisfactory to observe that the second reservoir in the Black Moss Valley, with a capacity of 80 million gallons, has been completed. The first reservoir in the Ogden Valley should soon be completed, and will increase the storage capacity by 50 million gallons, which will for a considerable time ensure consumers a good and plentiful supply of pure water.

Sewerage, Scavenging, &c.—The treatment of sewage at the outfall works has not given satisfaction to the Ribble Joint Committee, and further extensions are in contemplation. A percolating bed 100 feet by 7 feet deep is being constructed which will be capable of dealing with 350,000 gallons of sewage per day, and will to that extent relieve the existing filters, which are now overworked. Scavenging is carried out satisfactorily by the Corporation employees. All ashes and refuse are burned at the destructor, which continues to work satisfactorily.

Sanitary Inspection.—Slaughter-houses, 19 in number, have been fairly well conducted. No complaint is made as to the condition of the bakehouses, workshops, or the one common lodging-house in the borough. The dairies and cow-sheds—subject to regulations—have been found to be in a fairly good condition. The Inspector (Mr. Priestley) had under his notice 246 complaints of nuisances, comprising 126 defective sink waste pipes, 29 ashpits without proper doors and coverings, 26 defective rain water pipes, 14 water closets without proper flush, 10 defective drains, 6 houses without sufficient privy accommodation, 2 smoke nuisances, 2 defective flagging in yards, and 1 accumulation of manure. Abatement of the above has in most cases been secured by an intimation to the persons responsible, but 130 statutory notices had also to be issued.

Newton-in-Makerfield.—(Area in acres, 3,105; Estimated Population, 17,253).—*Medical Officer of Health*, JOHN WEBB WATKINS, M.D.; *Salary*, £75.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate	34·9	...	29·3	...	34·8
Death-rate	14·6	...	14·6	...	15·9
Zymotic death-rate.....	1·39	...	1·66	...	2·28
Phthisis ,,	0·86	...	0·47	...	0·80
Respiratory ,,	3·82	...	2·97	...	3·21
Rate of deaths under 1 year to 1,000 births	121	...	163	...	151

The birth-rate shows an increase of 5·6 per 1,000 of the population as compared with last year, while the general death-rate remains exactly the same. The zymotic rate and the proportion of infant deaths to births each show a satisfactory diminution, and with two exceptions are the lowest recorded during the 10 years 1892-1901. Diarrhoea gave rise to 6 deaths against 14 in the previous year. Measles contributed

4 deaths and whooping cough 1 death, as compared with 2 and 5 deaths respectively in 1901. The only diseases which prevailed in what might be termed an epidemic form were scarlet fever and diphtheria. The former was the cause of 60 cases 3 deaths, and the latter—associated with membranous croup—31 cases 9 deaths. Both these diseases prevailed to the greatest extent in the last quarter of the year. The majority of the attacks occurred in the contiguous parts of Town Hall, Viaduct, and Crow Lane Wards, a fact which points to a probable focus of infection in a part of one of the wards close to the others. Observations are now being carried on with a view to localising, if possible, the focus referred to. Typhoid fever was responsible for 5 cases 1 death, erysipelas 16 cases, and puerperal fever 1 case. The arrangements made for bacteriological examinations in doubtful cases of typhoid fever, diphtheria, and phthisis have proved of great service. On the 26th March phthisis was made a voluntarily notifiable disease, and from that date to the end of the year 17 cases were reported.

Hospital Accommodation.—Cases are sent from this district to the hospital of the Warrington Corporation, but the accommodation available has not been adequate for the number of patients willing to be removed. Twenty-three removals took place—22 scarlet fever and 1 typhoid fever. A site for a local infectious hospital has been provisionally agreed upon, and since the present year (1903) began a tent for the treatment of small-pox cases has been erected.

Disinfection.—No apparatus. Rooms fumigated either with sulphur or formalin numbered 183.

Water Supply.—It is hoped that the water supply extension scheme will shortly be completed, and then a bountiful and wholesome supply sufficient to meet the requirements of the district for many years to come will be available.

Sewerage, Scavenging, &c.—Almost the whole of the

sewage is now treated in bacterial contact beds. Considerable extensions of the sewer have recently been made. Scavenging is carefully carried out by the Authority. As sites for the disposal of refuse are becoming difficult to obtain the provision of a destructor is recommended.

Sanitary Inspection.—Bakehouses, on the whole, are in good condition, but 2 in cellars have been declared unfit, on sanitary ground, for their purpose. Slaughter-houses and lodging-houses are described as fair, and the dairies and cowsheds appear to be well kept. One cowshed was reconstructed, and in two others the drainage, ventilation, &c., were improved. Seventy-three premises were inspected under the Factory and Workshop Act. For exposing putrid shrimps for sale legal proceedings were instituted and a fine of £2 and costs inflicted. The Inspector (Mr. Ashcroft) reports on 541 nuisances abated after the service of 221 preliminary and 18 legal notices.

Norden.—(Area in acres, 5,358; Population, Census 1901, 3,907.)—*Medical Officer of Health*, JOHN A. GRINDROD, M.R.C.S.; *Salary*, £30.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate	21·2	...	25·8	...	20·6
Death-rate	17·1	...	13·0	...	14·7
Zymotic death-rate.....	1·53	...	1·02	...	1·15
Phthisis ,, 	0·76	...	0·51	...	0·92
Respiratory ,, 	3·58	...	2·81	...	2·33
Rate of deaths under 1 year to 1,000 births.....	108	...	148	...	119

The statistics for the year under review are marked by a decrease of 4·6 per 1,000 of the population in the birth-rate as compared with 1901, and an increase in the death-rate equal to 4·1. The zymotic, phthisis, and respiratory rates are also less favourable, but the proportion of deaths under 1 year to 1,000 births shows a gratifying diminution: Measles—the

cause of 5 deaths—was prevalent at the beginning and end of the year; in February an outbreak occurred at Lanehead, in Catley Lane Ward, and continued until the middle of March. A few cases also arose in Norden Village about the same time. In the first mentioned area the school was closed for a period of five weeks, but in the village the exclusion of scholars from infected houses was deemed sufficient. Only 19 notifications were received, viz., scarlet fever 12 (1 fatal), typhoid fever 2, and erysipelas 5. The Infectious Diseases (Prevention) Act, 1890, was adopted in September.

Hospital Accommodation.—A farmhouse at Cheesden Top has been converted into a hospital (4 beds) for the treatment of any cases of small-pox that may arise. There is no provision for ordinary infectious cases.

Disinfection.—No apparatus. Sulphur fumigation is relied on.

Water Supply, obtained from the Heywood Corporation, is described as good.

Sewerage, Scavenging, &c.—A Local Government Board Inquiry was held on the 15th April, 1902, into an application for leave to borrow £11,960 for new sewage disposal works. The Order of Court obtained by the Mersey and Irwell Joint Committee requiring the construction of sewage works has several times been extended. Scavenging as performed by the Authority gave satisfaction.

Sanitary Inspection.—Bakehouses and slaughter-houses are in fairly good condition, and a gradual improvement is taking place in the cowsheds as far as regards lighting and ventilation. The premises inspected under the Factory and Workshop Act were, with few exceptions, in satisfactory condition. Only 4 notices were required for the abatement of nuisances. Several smoke observations were taken.

Ormskirk.—(Area in acres, 574; Population, Census 1901, 6,857).—*Medical Officer of Health*, WILLIAM ANDERTON, F.R.C.S.E.; *Salary*, £50.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years 1892-1901.
Birth-rate	32·0	...	32·8	...	34·6
Death-rate	18·6	...	19·5	...	22·6
Zymotic death-rate.....	0·87	...	1·02	...	1·90
Phthisis „	1·02	...	1·60	...	2·02
Respiratory „	5·39	...	4·22	...	5·90
Rate of deaths under 1 year to 1,000 births.....	154	...	160	...	161

The birth and death rates are 2·6 and 4·0 per 1,000 of the population respectively below the mean of the 10 years 1892-1901, the latter rate being the lowest recorded during that period. The zymotic, phthisis, and infant rates are also below the average. Measles although the cause of only 2 deaths was somewhat prevalent at the close of the year, and in consequence two schools were closed for a period of six weeks. Whooping cough did not give rise to any fatality, and only 1 death was ascribed to diarrhoea. Notifications received amounted to 63 against 32 in the previous year. Small-pox contributed 3 cases, scarlet fever 48 cases with 2 deaths, diphtheria 2 cases with 1 death, and erysipelas 10 cases.

Hospital Accommodation is provided jointly with Lathom and Burscough at Green Lane for ordinary infectious diseases, and at Burscough for small-pox. Twenty-five cases were removed, viz., small-pox 3, scarlet fever 21, and diphtheria 1.

Disinfection.—The steam apparatus was used 16 times, and 29 houses were fumigated.

Water Supply, good and abundant, obtained from the Council's own waterworks. The yield averaged 22 gallons per head per day.

Sewerage, Scavenging, &c.—Sewage is well distributed over a farm with an area of 30 acres and the underdrained effluent therefrom is discharged on to bacterial filters. During the year an additional coke breeze filter has been constructed, and also two new sludge beds. Scavenging is well performed by the Authority. A destructor would solve the difficulty of obtaining suitable tips for the refuse.

Sanitary Inspection.—The courts and alleys are regularly cleaned and swept, the drains flushed and disinfected, and where requisite the drains have been repaired. In some of the courts the pavement is in poor condition and difficult to keep clean, but “no doubt this matter is standing over until the scheme the Council have in hand (the dealing with all insanitary property) has been carried out.” One house was condemned and closed. Bakehouses, slaughter-houses, lodging-houses, and factories and workshops are on the whole in fair condition. The dairies and cowsheds do not entirely give satisfaction. Thirty nuisances were abated after the service of 10 notices.

Orrell.—(Area in acres, 1,617; Population, Census 1901, 5,436).—*Medical Officer of Health*, J. LLOYD JOHNSTONE, M.R.C.S.; *Salary*, £30.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate.....	37·5	...	38·4	...	40·3
Death-rate	14·3	...	18·2	...	19·0
Zymotic death-rate.....	1·10	...	4·96	...	2·85
Phthisis ,,	0·18	...	0·91	...	1·00
Respiratory ,,	2·94	...	2·39	...	3·42
Rate of deaths under 1 year to 1,000 births.....	117	...	191	...	148

The birth-rate, although well above the County average, is 2·8 per 1,000 of the population below the mean of the

preceding decennial period. The death-rate, which shows a reduction of 4·7, is the lowest ever recorded for the district, and the rate of deaths under 1 year to 1,000 births, is less than in any year since 1892. The zymotic and phthisis rates are also below the average of previous years. Diarrhoea, which last year contributed 18 deaths, did not cause a single fatality. Measles was the cause of 3 deaths, against 1 death in 1901. The notifications of infectious disease (55) were fewer than in any year since the Act was adopted. Scarlet fever was responsible for 20 cases, deaths nil, as compared with 26 cases and 2 deaths last year. Typhoid fever gave rise to 11 cases 2 deaths; contrasting these figures with 1901, a most marked improvement is noticed, as 45 notifications and 5 deaths were then recorded. Diphtheria and membranous croup accounted for 5 cases 1 death, erysipelas 15 cases, and puerperal fever 4 cases.

Hospital Accommodation nil.

Disinfection.—No apparatus. Dr. Johnstone advises the Council to provide steam disinfecting appliances.

Water Supply “abundant and good.”

Sewerage, Scavenging, &c.—Sewage is turned into the mains of the Wigan Corporation at Gathurst. Scavenging is carried out in a satisfactory manner by the Authority.

Sanitary Inspection.—Inspection of the district is carried out systematically. Dairy and cowshed regulations have not been adopted. Bakehouses and slaughter-houses are well kept, and factories and workshops generally comply with sanitary requirements. Thirty new closets and 17 new ash-pits have replaced 14 old closets and 8 ash-pits. To secure the abatement of 79 nuisances 25 written and several verbal notices were required.

Oswaldtwistle.—(Area in acres, 4,885 ; Estimated Population, 14,500).—*Medical Officer of Health*, EDWIN HAWORTH, M.B.; *Salary*, £60.

Per 1,000 of Population.	1902.	1901.	Mean of 10 years, 1892-1901.
Birth-rate	27·4	26·6	28·3
Death-rate	13·2	17·5	17·0
Zymotic death-rate.....	0·82	2·20	2·05
Phthisis „	0·75	0·75	0·81
Respiratory „	2·41	3·58	4·13
Rate of deaths under 1 year to 1,000 births	138	209	170

The mortality statistics presented by Dr. Haworth compare very favourably with those of 1901. The death-rate, which is the lowest recorded during the 10 years 1892-1901, shows a reduction equal to 4·3 per 1,000; the zymotic rate declined 1·38, and the proportion of infant deaths to births fell from 209 to 138. Only 1 death was ascribed to measles, but owing to the prevalence of this disease in June at Cocker Brook the school was closed for a period of 4 weeks. Whooping cough was the cause of 3 deaths and diarrhœa 1 death. The number of cases of scarlet fever—45 with 1 death—is still large, though considerably less than in the previous 3 years. An outbreak occurred at Belthorn during the autumn months necessitating school closure. Dr. Haworth reports “the indifference shown there to the danger of spreading the disease was certainly deserving of censure.” Diphtheria and membranous croup caused 14 cases 5 deaths: “many cases were the result of damp scullery and kitchen walls caused by defective slop-pipes and gullies, which allow the slops to percolate into the surrounding earth.” The remaining notifications were typhoid fever 9 cases (1 fatal) and erysipelas 6 cases.

Hospital Accommodation.—The only provision is a farmhouse kept in readiness for small-pox.

Disinfection.—Steam apparatus provided.

Water Supply good, both in regard to quantity and quality, is obtained from the Council's own reservoir. Special attention has been given to the gathering ground with a view to discovering any point where pollution might occur.

Sewerage, Scavenging, &c.—Three bacterial contact beds were completed during the year, and 3 sprinkler filters, each 54 feet in diameter and 9 feet deep, are now in course of construction at an estimated cost of £2,340. Scavenging is carried out in a satisfactory manner by the employees of the District Council, the refuse being tipped in a valley situate a considerable distance from dwellings.

Sanitary Inspection.—Four houses in Bury Court were condemned as unfit for human habitation. Bakehouses, slaughter-houses, and lodging-houses are reported as satisfactory, but there is room for considerable improvement in the dairies and cowsheds, more especially as regards ventilation, drainage, and water supply. On the 18th August, 1902, the model dairy, &c., regulations under the Order of the Local Government Board were adopted, and a printed copy was delivered to every farmer in the district. Factories and workshops on the whole comply with sanitary requirements. During the year 118 privy middens were converted to the water-carriage system, and small covered ash receptacles provided. There are now in the district 1,488 houses, 8 schools, and 7 cotton factories with water closets in lieu of old privies, the alterations having cost £8,000. Many privies, however, remain, conversion of which cannot be carried out until new sewers are laid. The nuisance reported last year, arising from noxious vapours emitted from one of the paper works, has not yet been abated, but steps are now being taken with that object in view. The Inspector (Mr. Hunter) reports that he served 153 notices to secure the abatement of 146 nuisances. No smoke observations were taken.

Padiham.—(Area in acres, 970 ; Population, Census 1901, 12,205).—*Medical Officer of Health*, W. SMITHIES, L.R.C.P.; *Salary*, £35.

Per 1,000 of Population.	1902.	1901.	Mean of 10 years, 1892-1901.
Birth-rate	27·7 ...	27·9 ...	26·7
Death-rate	16·1 ...	20·4 ...	17·4
Zymotic death-rate.....	1·96 ...	1·63 ...	2·00
Phthisis ,,	0·57 ..	1·39 ...	1·02
Respiratory ,,	2·53 ...	2·70 ...	3·43
Rate of deaths under 1 year to 1,000 births.....	194 ...	219 ...	185

As compared with last year the birth-rate shows only a fractional decrease, but the death-rate declined 4·3 per 1,000 of the population. The infant rate, although somewhat reduced, is still excessive. Dr. Smithies considers this high rate to be in great part due to the employment of mothers in mills, which gives rise to the pernicious nursing-out system, and also to the fact that a great proportion of the women are very ignorant as to feeding and nursing of young children. Measles caused 13 deaths, and was prevalent about July, when all the schools were closed for a month. The disease itself was not of a severe type, almost all the deaths being due to complications. Diarrhoea, fatal in 12 instances in 1901, did not cause a single death, and only 1 death was ascribed to whooping cough. Small-pox caused considerable anxiety in the district; the first case was reported on the 19th of July, and before this outbreak subsided (in September) 31 other cases were notified. Another case—of independent origin—occurred on the 23rd October, and six additional attacks took place between December 27th and the end of the year, making a total of 39 cases. “The first outbreak was due to the visit of a Padiham man to Brierfield, where small-pox was at the time prevalent. This case was of a very mild nature, and was not considered to be small-pox ;

the man's wife, however, contracted the disease, and eventually their child. The woman had been so little affected that she followed her work in the mill. Seventeen cases sprang directly from the room in which she worked, and the remaining 14 from contact with one or other of the 17; 9 of the 14 occurred in the houses of the early cases, and 5 from contact outside—one in particular from assisting with some infected bedding." The infection in the October case was obtained in a neighbouring district, and the December cases were contracted from a hawker who stayed at a common lodging-house. The inmates of all infected houses were quarantined for 14 days, and occasionally for a longer period, and careful disinfection of the premises was carried out. Of the 39 cases 31 were removed to hospital, 8 being unavoidably kept at home owing to the hospital not being ready to receive them. Two of the small-pox patients died in hospital. Scarlet fever, with 105 cases 3 deaths, was prevalent from January to October. Typhoid fever gave rise to 2 cases, diphtheria and membranous croup 15 cases 5 deaths, erysipelas 14 cases, puerperal fever 2 cases, and continued fever 1 case.

Hospital Accommodation is available at the Burnley, &c, joint hospital. As stated above, 31 cases of small-pox were removed, as well as 58 patients suffering from scarlet fever.

Disinfection.—The Burnley Corporation apparatus is used for the disinfection of bedding, clothing, &c., but this work would be much simplified if locally a disinfector was provided. Houses are fumigated with sulphur or formaldehyde.

Water Supply "very good."

Sewerage, Scavenging, &c.—Sewage undergoes treatment by precipitation and subsequent land filtration. As the area of the farm is too small for the amount of sewage dealt with, the Council have had under consideration the question of making bacteria filter beds. Scavenging is performed by the Authority, the refuse being taken to the destructor.

Sanitary Inspection.—"The general sanitary condition of the town is not quite what it might be, particularly with regard to the closet accommodation at many of the older houses." Bakehouses, slaughter-houses, and dairies and cowsheds are, as a rule, "well kept." The lodging-houses require more systematic inspection, and the existing regulations should be more strictly enforced. Factories and workshops come under constant supervision. Forty-three notices were required for the abatement of a like number of nuisances. Ten smoke observations were taken.

Pemberton.—(Area in acres, 2,895; Estimated Population, 22,071.)—*Medical Officer of Health*, ROBERT HARTLEY, M.R.C.S.; *Salary*, £60.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years 1892-1901.
Birth-rate	39·2	...	40·0	...	39·4
Death-rate	17·2	...	18·2	...	19·8
Zymotic death-rate.....	2·67	...	3·09	...	3·45
Phthisis ,,	0·58	...	0·78	...	0·84
Respiratory ,,	3·26	...	3·46	...	3·94
Rate of deaths under 1 year to 1,000 births.....	185	...	169	...	177

The birth-rate continues high, and the general death-rate shows a reduction of 2·6 per 1,000 of the population as compared with the mean of the 10 years 1892-1901. The infantile mortality is unsatisfactory, and compares unfavourably with previous years. Dr. Hartley again expresses the opinion that this rate might be considerably reduced if young children were not so much exposed to the night air and inclement weather. Diarrhœa, as in 1901, had an extensive prevalence, and caused 34 deaths. Whooping cough gave rise to 4 deaths and measles 9 deaths. Owing to the prevalence of the latter disease the schools at Kitt Green were closed for a fortnight. Seventy-eight cases and 5 deaths were ascribed to scarlet fever; only

2 cases were isolated in hospital, “owing in a great measure to parents preferring to nurse their children and keep them at home.” An epidemic of typhoid fever occurred in the latter half of the year. From a special report prepared in November it appears that in many of the houses attacked insanitary conditions existed, such as defective drainage, unpaved yards, percolation of liquid from privy middens, and in some instances overcrowding. Suspicion also attached itself to milk obtained from a certain farm which supplied the majority of the houses attacked. The cattle at this farm had free access to a brook on the banks of which was stored ashpit refuse, part of which had been washed by storms into the brook. Altogether 82 cases of typhoid fever were notified and 3 deaths resulted. Diphtheria and membranous croup contributed 23 cases 4 deaths, erysipelas 36 cases, and puerperal fever 3 cases.

Hospital Accommodation.—The hospital—provided with 8 beds—was used for the isolation of 17 cases of typhoid fever and 2 cases of scarlet fever.

Disinfection.—Bedding, clothing, &c., is disinfected in the dry heat stove at the hospital. Ninety-four houses were fumigated with sulphur.

Water Supply good, both in quality and quantity.

Sewerage, Scavenging, &c.—The sewage works appear to be conducted in a satisfactory manner. Owing to mining operations subsidence of the sewers often takes place. Complaints regarding offensive smells from sewer manholes resulted in additional ventilating shafts being erected. Excrement removal is carried out by the Authority. An improvement could be effected by emptying the contents of ashpits directly into the carts instead of on the yards as at present.

Sanitary Inspection.—Several cases of overcrowding of dwellings were dealt with, and a considerable number of nuisances caused by the keeping of animals in close proximity

to houses received attention. Bakehouses and slaughter-houses are described as "fairly good." Dairies and cowsheds are also in fair condition, several having been recently improved as regards lighting, ventilating, and paving. Factories and workshops were inspected with satisfactory results. A few privy middens were converted into water closets and many others were improved by being reduced in size, the floor cemented, and the brickwork repaired. There are a considerable number of backyards with fouled surface due to the absence of flagging or paving. Seventy-two legal and a considerable number of verbal notices were required to secure the abatement of 357 nuisances. Smoke observations are taken frequently.

Poulton-le-Fylde.—(Area in acres, 915; Population, Census 1901, 2,223.)—*Medical Officer of Health*, JAMES ANDERSON, M.B.; *Salary*, £20.

Per 1,000 of Population.	1902.	1901.	Mean of 2 years, 1900-1901.
Birth-rate	26·5 ...	22·9 ...	26·3
Death-rate	14·8 ...	13·9 ...	12·8
Zymotic death-rate.....	0·44 ...	0·44 ...	0·22
Phthisis ,,	nil. ...	nil. ...	1·06
Respiratory ,,	3·14 ...	1·34 ...	0·67
Rate of deaths under 1 year to 1,000 births.....	101 ...	137 ...	131

The mortality statistics are again of a satisfactory character, although the death-rate is slightly higher than in the previous year. The zymotic rate was wholly accounted for by 1 death from typhoid fever. Only 8 notifications were received, viz., scarlet fever 5, and typhoid fever 3.

Hospital Accommodation is provided by the Fylde Joint Committee at Moss Side for ordinary infectious cases, and at Elswick for small-pox cases. No removals took place.

Disinfection.—No apparatus, sulphur fumigation of houses being relied on.

Water Supply good, obtained from the Fylde Water Board.

Sewerage, Scavenging, &c.—Sewage flows by gravitation into the tidal portion of the River Wyre at Skippool. Sewers are regularly flushed. Little exception can be taken to the system of scavenging, which is in the hands of contractors. Refuse is tipped into a disused marl pit.

Sanitary Inspection.—A special report was made regarding the condition of property in Cock Pit Court. Bakehouses appear to be well conducted, and slaughter-houses—reduced from 5 to 3—are in good condition. Dairies and cowsheds—subject to regulations—are well kept. The nuisances abated required the service of 24 notices.

Preesall-with-Hackinsall.—(Area in acres, 3,232; Estimated Population, 1,450.)—*Medical Officer of Health*, W. H. ROBINSON, M.R.C.S.; *Salary*, £20.

Per 1,000 of Population.	1902.		1901.		Mean of 2 years, 1900-1901.
Birth-rate	26·2	...	30·2	...	28·8
Death-rate	15·1	...	14·0	...	10·5
Zymotic death-rate.....	0·68	...	2·81	...	2·73
Phthisis ,, 	1·37	...	nil.	...	nil.
Respiratory ,, 	3·44	...	2·10	...	1·49
Rate of deaths under 1 year to 1,000 births	78	...	23	...	27

As compared with the previous year the birth-rate shows a reduction of 4·0 per 1,000 of the population, while the general death-rate increased 1·1. The zymotic rate—accounted for by 1 death from typhoid fever—fell considerably, but the infantile mortality, although still satisfactory, was much above the average for this district. Scarlet fever gave rise to 18 cases,

against 13 in 1901; the cases occurred intermittently until the end of September when the disease apparently died out. Nearly all the attacks took place amongst children of the salt miners, from which it appears that if the first cases could have been properly isolated several others would have been prevented. Typhoid fever contributed 2 cases, diphtheria 5 cases, and erysipelas 2 cases.

Hospital Accommodation for ordinary infectious diseases nil. The small-pox hospital at Elswick is available.

Disinfection.—No apparatus. Houses fumigated with sulphur.

Water Supply.—Dr. Robinson states:—"I am pleased to report that your Council have seen the necessity for a good water supply, and have, during the past year, been in constant communication with the adjoining rural district with a view to eventually being supplied with water from the Fylde Water Board. I hope the negotiations will speedily have the desired effect, as the scarcity of water is seriously felt in the summer months, especially at Knott End."

Sewerage, Scavenging, &c.—Notwithstanding the urgent want of a system of sewerage no progress has been made in this matter during the year under report. The Medical Officer of Health again points out the danger to health entailed by this neglect. The excrement disposal in the populous part of the district is undertaken by the Authority.

Sanitary Inspection.—Bakehouses—6 in number—are described as "fair." Of the two slaughter-houses one requires a tank for drainage purposes, and the other does not comply with the bye-laws. Dairies and cowsheds are not subject to regulations and do not come under supervision. Factories and workshops (14) receive visits twice annually. The Inspector (Mr. McCarter) served 21 notices and secured the abatement of 18 nuisances.

Prescot.—(Area in acres, 297; Population, Census 1901, 7,855.)
Medical Officer of Health, EGERTON F. HALL, M.D.;
Salary, £35.

Per 1,000 of Population.	1902.	1901.	Mean of 10 years, 1892-1901.
Birth-rate	36·0 ...	35·2 ...	38·6
Death-rate	19·8 ...	18·8 ...	19·0
Zymotic death-rate.....	2·80 ...	2·03 ...	2·46
Phthisis ,, 	1·27 ...	1·27 ...	0·83
Respiratory ,, 	2·80 ...	2·54 ...	3·95
Rate of deaths under 1 year to 1,000 births.....	169 ...	169 ...	162

The birth-rate is fractionally higher than last year's rate, but 2·6 per 1,000 below the mean of the past decade. The death-rate was in excess of any year since 1895, while the zymotic and infant rates cannot be considered satisfactory. Measles and whooping cough did not give rise to a single death, but diarrhœa contributed 14 deaths, equal to a rate of 1·78 per 1,000. Small-pox caused 1 case, which received prompt removal to hospital; disinfection was thoroughly carried out, and all other precautions adopted. Scarlet fever was responsible for 67 cases 1 death, typhoid fever 27 cases 4 deaths, diphtheria and membranous croup 8 cases 3 deaths, erysipelas 17 cases, and puerperal fever 1 case.

Hospital Accommodation.—Nine cases were removed to the Whiston sanatorium, viz., small-pox 1, typhoid fever 3, and scarlet fever 5.

Disinfection.—Steam apparatus at the hospital available. Houses fumigated numbered 50.

Water Supply described as “good.”

Sewerage, Scavenging, &c.—The sewage farm is said to be conducted satisfactorily. The question of providing bacteria beds has been under consideration. Scavenging is efficiently performed by the Authority.

Sanitary Inspection.—It is satisfactory to observe that the houses condemned last year have been finally closed, and more insanitary premises will shortly have to be dealt with. Bakehouses, slaughter-houses, factories, workshops, dairies, and cowsheds are all described as “fair.” Thirty-four privy middens were abolished, and water closets substituted. The Inspector (Mr. Leyland) gives details of a large amount of work accomplished in his department. Notices served amounted to 71, and nuisances abated numbered 165.

Prestwich.—(Area in acres, 3,167; Estimated Population (excluding Asylum), 10,088.)—*Medical Officer of Health*, FRED STEPHENSON, L.R.C.P.E.; *Salary*, £50 (no claim).

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate.....	21·2	...	21·5	...	24·3
Death-rate	12·0	...	15·7	...	14·3
Zymotic death-rate..... ..	0·69	...	2·74	...	1·70
Phthisis ,, 	1·38	...	1·11	...	1·04
Respiratory ,, 	2·77	...	2·84	...	2·51
Rate of deaths under 1 year to 1,000 births.....	79	.	117	...	119

The birth-rate is again low, and accompanied by an improvement in the mortality statistics. The general death-rate, with two exceptions, is lower than any recorded during the 10 years 1892-1901, while the zymotic rate is the lowest since 1892, and the rate of deaths under 1 year to 1,000 births is still more favourable. During the month of February measles appeared in epidemic form in the Rooden Lane district, and in consequence the infant school was closed for three weeks; fortunately only 2 deaths were due to this disease. Diarrhoea contributed only 1 death, scarlet fever—of a mild type—22 cases 2 deaths, diphtheria 10 cases 2 deaths, and typhoid fever, erysipelas, and puerperal fever each 1 case.

Bacteriological examinations of suspected diphtheria and typhoid fever cases have been of great assistance; of 8 diphtheria specimens submitted only 2 were verified, and of 6 typhoid fever cases examined only 1 confirmed the diagnosis.

Hospital Accommodation.—Five beds at the Salford Corporation hospital (Ladywell) are reserved for the use of this district; 13 cases were removed, viz., scarlet fever 10, diphtheria 2, and typhoid fever 1. An arrangement has also been made with the above-mentioned Authority to take cases of small-pox into their newly acquired hospital at Drinkwater Park.

Disinfection.—No proper appliances, sulphur fumigation being relied upon.

Water Supply for the villages of Prestwich, Rooden Lane, and Rainsough is derived from the Corporations of Manchester and Bury; the Manchester water is of excellent quality, and that from Bury has much improved. Simister Lane village receives a satisfactory supply from the Corporation of Heywood.

Sewerage, Scavenging, &c.—Sewage is treated at two outfall works—George Street and the Clough. The Mersey and Irwell Joint Committee have several times drawn attention to unsatisfactory effluents, and in consequence considerable improvements are now being effected. The Council's workmen carry out scavenging in a systematic manner.

Sanitary Inspection.—In the early part of the year a house-to-house inspection took place, resulting in many defects being discovered, which were subsequently remedied. Six houses were condemned as unfit for habitation. Bakehouses 13, including 2 underground, and slaughter-houses 3, are described as "good." Subsequent to a special examination owners of cowsheds were supplied with a full list of requirements of structural alterations as regards lighting, ventilation, paving, and drainage, and they were also notified of the

number of cows they would be allowed to keep in each cowshed. In many cases the necessary improvements have been carried out. Factories and workshops (22) are kept under observation. A considerable number of privy middens were converted to the water carriage system. Nuisances abated amounted to 219, notices served 54, and smoke observations taken 27.

Radcliffe.—(Area in acres, 3,098; Estimated Population, 25,400.)—*Medical Officer of Health*, WM. GILL, L.R.C.P.; *Salary*, £60 (no claim).

Per 1,000 of Population.	1902.		1901.		Mean of 9 years, 1893-1901.
Birth-rate	28·7	...	25·0	...	27·6
Death-rate	17·7	...	18·3	...	17·9
Zymotic death-rate.....	1·41	...	2·79	...	2·73
Phthisis ,, 	1·22	...	1·22	...	0·99
Respiratory ,, 	3·66	...	3·85	...	3·94
Rate of deaths under 1 year to 1,000 births	157	...	191	...	191

The birth-rate is 1·1 per 1,000 above the average of the previous decade and the death-rate is lower than in any year since 1898. The zymotic and infant rates each show very gratifying reductions. Black Lane Ward had the highest death-rate (18·7) and Radcliffe Hall Ward the lowest (14·9). Measles gave rise to 13 deaths, and owing to its prevalence school closure was resorted to. The absence of hot weather resulted in a fall in the number of diarrhoea deaths, only 5 being recorded, as compared with 36 last year, and 27 in 1900. After seven years immunity small-pox appeared during the last quarter of the year. Ten cases were notified—2 in October, 2 in November, and 6 in December—and 1 death resulted. Six of the attacks took place in Radcliffe Bridge Ward, in which is situated the common lodging-house first affected, and the remaining 4 occurred in Radcliffe Hall Ward, and were

distinctly traceable to the same source of infection. The precautionary measures taken for the prevention of the spread of the disease included immediate removal of 9 of the patients to the Bury Corporation hospital at Birtle, thorough disinfection of the rooms, and prompt vaccination of, and a continual surveillance over, all those who had been in contact. The lodging-house was kept under constant supervision, and hand-bills were widely distributed describing the first signs and symptoms of small-pox. The remaining case was not removed, as the patient became convalescent before discovered. Scarlet fever gave rise to 46 cases, and all recovered. Typhoid fever contributed 47 cases 7 deaths, against 32 cases 8 deaths in the previous year; and diphtheria, associated with membranous croup, was the cause of 42 cases 10 deaths, as compared with 55 cases 16 deaths in 1901. The remaining notifications were erysipelas 33 cases, puerperal fever 3 cases, and continued fever 1 case.

Hospital Accommodation.—As stated above 9 small-pox cases were removed to Bury Corporation hospital. The Joint Hospital Board have recently erected a temporary small-pox pavilion at Ainsworth. Accommodation for ordinary infectious disease will shortly be provided at the Bury Isolation Hospital, which will become the property of a joint committee.

Disinfection.—No apparatus. Houses fumigated with sulphur numbered 184.

Water Supply, obtained from the Bury Joint Board, now gives rise to fewer complaints than formerly. Filter beds are in course of construction.

Sewerage, Scavenging, &c.—On one occasion (September 24th) the Mersey and Irewell Joint Committee called attention to an unsatisfactory effluent from the sewage works. Scavenging, performed by the Authority, is said to be satisfactory, so far as the privy midden system will allow.

Sanitary Inspection.—Bakehouses (28) and slaughterhouses each with 1 exception gave satisfaction. New regulations regarding dairies and cowsheds came into operation on March 1st, 1902; at some of the farms structural alterations are needed to bring the premises into compliance with the regulations. The workshops examined showed no cause for complaint with respect to cleanliness and sanitary arrangements, but at one of the factories legal proceedings had to be instituted before the requisite closet accommodation was provided. The Inspector (Mr. Smith) reports that 21 privy middens were converted to the water-carriage system. He paid 70 visits to 29 canal boats, and found 5 infringements of the Act. Altogether 1,834 nuisances received his attention, and 48 smoke observations were taken.

Rainford.—(Area in acres, 5,877; Estimated Population, 3,344.)—*Medical Officer of Health*, FRANK PROSSER, M.B.; *Salary*, £20.

Per 1,000 of Population.	1902.	1901.	Mean of 10 years, 1892-1901.
Birth-rate.....	31·6 ...	28·5 ...	29·7
Death-rate	14·3 ...	13·3 ...	15·5
Zymotic death-rate.....	0·89 ...	1·78 ...	1·66
Phthisis „	0·29 ...	0·29 ...	1·19
Respiratory „	1·49 ...	1·78 ...	3·03
Rate of deaths under 1 year to 1,000 births.....	113 ...	125 ...	114

As compared with the previous year the birth and death rates show increases of 3·1 and 1·0 per 1,000 respectively. The phthisis rate remains the same, but the zymotic, respiratory, and infant rates show satisfactory reductions. Only 3 deaths were ascribed to the seven principal zymotic diseases, viz., typhoid fever 2 and whooping cough 1. A case of small-pox—contracted in Whiston—was reported on December 18th, and prompt removal to hospital took place. Scarlet fever again

declined, only 6 cases being notified, against 18 last year and 51 in 1900. Typhoid fever caused the same number of cases as in the previous year, viz., 10. Dr. Prosser says one of the probable operative causes in the production of this disease is the objectionable privy midden often in too close proximity to dwellings. Erysipelas contributed 8 cases and diphtheria 1 case.

Hospital Accommodation.—The cottage hospital (4 beds) was only used for two cases—1 small-pox and 1 typhoid fever.

Disinfection.—No apparatus.

Water Supply good, obtained chiefly from St. Helens.

Sewerage, Scavenging, &c.—Sewage is discharged into cesspools. The householders are responsible for scavenging, which is not satisfactorily carried out. This work would be more effectively performed by the Authority.

Sanitary Inspection.—Bakehouses are in good order, and the only slaughter-house in the district is well kept. Dairies and cowsheds—subject to regulations—are described as clean and well ventilated. Forty notices requiring the abatement of nuisances were complied with.

Ramsbottom.—(Area in acres, 6,424; Population, Census 1901, 15,920.)—*Medical Officer of Health*, WILLIAM DEANS, M.B.; *Salary*, £60.

Per 1,000 of Population.	1902.	1901.	Mean of 10 years, 1892-1901.
Birth-rate.....	21·3 ...	22·8 ...	22·8
Death-rate	15·8 ...	15·7 ...	14·8
Zymotic death-rate.....	1·00 ...	1·38 ...	1·44
Phthisis ,,	1·00 ...	1·50 ...	1·24
Respiratory ,,	3·07 ...	2·44 ...	3·30
Rate of deaths under 1 year to 1,000 births.....	117 ...	132 ...	129

A reduction of 1·5 per 1,000 in the birth-rate as compared

with last year is accompanied by a fractional increase in the death-rate. The zymotic, phthisis, and infant rates compare favourably with previous years. Measles—the cause of 10 deaths—appeared in epidemic form during the months of September, October, and November, and it was found necessary to close five schools for periods varying from two to five weeks. Before the schools were re-opened thorough disinfection took place. Diarrhœa contributed only 2 deaths, against 15 in the previous year; whooping cough gave rise to 1 death. A case of small-pox of a mild nature occurred in November, and was successfully treated at home. Scarlet fever was responsible for 28 cases, typhoid fever 10 cases 1 death, and diphtheria 8 cases 2 deaths.

Hospital Accommodation.—The Joint Hospital Committee will soon be associated with the Bury Corporation for hospital purposes. One case of scarlet fever was removed to the Bury Corporation hospital.

Disinfection.—No proper appliances. Houses are sprayed and fumigated with formaldehyde.

Water Supply.—The chief supply is obtained from the Bury, &c., Joint Board. The defective supply to the district of Summerseat, complained of last year, has been improved, but a few houses have still to rely on pumps and springs situated a considerable distance away.

Sewerage, Scavenging, &c.—The extended Order of Court obtained by the Mersey and Irwell Joint Committee expired on June 26th, and the Chief Inspector then reported that progress in carrying out the necessary works had been “most unsatisfactory, and there seems no other means of arriving at a conclusion except to bring the matter again before the Court.” In July two summonses were issued, and the magistrates inflicted a fine of £40 and costs in one case, and ordered the Council to pay costs in the other. The Medical Officer of

Health reports “the work for the completion of the outfall sewage works has now been commenced under contract, and it is expected the scheme of treatment will be in operation in about 18 months.” Scavenging is carried out partly by the Authority and partly by contract. The work in some of the outlying parts, such as Nuttall Village and Summerseat, does not give satisfaction. “A refuse destructor is urgently needed.”

Sanitary Inspection.—Forty-four old houses were demolished during the year, and closure orders relating to two other premises were issued. Bakehouses, slaughter-houses, lodging-houses, factories, and workshops, on the whole, comply with sanitary requirements. Dairies and cowsheds (75) receive periodical visits; several have been altered structurally, and in a few instances the drainage has been improved. Sixty-five privy middens were abolished, 38 being replaced by water closets, and 27 by pail closets. The Inspector (Mr. Fort) served 43 preliminary and 48 legal notices, and secured the abatement of 430 nuisances. Twenty-five smoke observations were taken, and in 13 instances the time limit—12 minutes per hour—was exceeded; 8 legal notices were served, and in consequence a great improvement was effected.

Rawtenstall (Borough).—(Area in acres, 9,535; Estimated Population, 31,170.)—*Medical Officer of Health*, R. SMITH, M.B., D.P.H.; *Salary*, £100.

Per 1,000 of Population.	1902.	1901.	Mean of 10 years, 1892-1901.
Birth-rate	22·5 ...	23·1 ...	26·4
Death-rate	14·1 ...	16·7 ...	17·7
Zymotic death-rate.....	0·64 ...	0·99 ...	1·91
Phthisis ,,	0·61 ...	0·80 ...	1·18
Respiratory ,,	3·30 ...	3·40 ...	4·22
Rate of deaths under 1 year to 1,000 births.....	137 ...	145 ...	154

As compared with the mean of the 10 years 1892-1901 the

birth and death rates for the year under review show decreases of 3·9 and 3·6 per 1,000 respectively, and both rates are the lowest recorded during the period mentioned. The zymotic, phthisis, and respiratory averages are also below any previously recorded, and the same may be said of the infantile mortality, excepting 1894 when the rate was 119. There have been no deaths from measles during this or the previous year, but two distinct epidemics occurred in 1902—one in February at Loveclough, invading Crawshawbooth to a slight extent, and the other in December in Rawtenstall proper. Three schools were closed with beneficial results. Whooping cough gave rise to a considerable number of cases, and 6 deaths resulted. Owing to the wet and cold summer diarrhoea caused fewer deaths than usual, only 5 being recorded against 14 in 1901. Small-pox was the cause of 2 cases 1 death—the first case was notified on November 3rd, a vagrant who had contracted the disease at Colne, being there in contact with a man from Leeds who was suffering from the disease. This was an exceedingly bad confluent case and terminated fatally. The second was of the modified variety, notified December 4th. The source of infection was not traced. Both patients had been vaccinated, but not re-vaccinated. Prompt removal to the small-pox hospital took place, and the contacts were re-vaccinated and quarantined. Scarlet fever was responsible for 60 cases 1 death, against 165 cases 6 deaths last year, and 290 cases 19 deaths in 1900. The only time this disease approached anything like an epidemic was at the end of November in Crawshawbooth. Thirty-eight cases of typhoid fever were reported and 5 deaths resulted; 11 of the cases were traceable to a milk supply which had been contaminated, and 10 others were infected from these cases. The milk supply was stopped for two weeks. In six cases defective drainage was probably the cause of the disease, and in 1 case the water supply was at fault. Diphtheria contributed 16 cases 2 deaths, erysipelas 25 cases, and puerperal fever 4 cases. Four diphtheria cases were examined bacteriologically and in 3 the

bacilli diphtheriæ were found; of 5 typhoid fever cases submitted to Widal's test 3 re-acted, and in 2 the result was negative.

Hospital Accommodation.—A small-pox hospital of 12 beds is provided at Ridge, and was used for the 2 cases above mentioned. Accommodation is still unprovided for ordinary infectious diseases.

Disinfection.—The steam apparatus was used for the disinfection of 619 articles. Sixty-nine houses and 3 schools were fumigated either with sulphur or formaldehyde. The Council now offer to disinfect houses, free of cost, after the occurrence of phthisis.

Water Supply.—The water supplied by the Bury and District Joint Board is "of good quality, but at present very liable to mixture with mud and vegetable debris." Filter beds are, however, in course of construction.

Sewerage, Scavenging, &c.—The sewage undergoes treatment by the bacterial process at the joint outfall works at Ewood Bridge. On two occasions the Mersey and Irwell Joint Committee expressed dissatisfaction with the character of the effluent. Scavenging is done in "as efficient a manner as possible" by the Authority. Since the settling-chamber was added to the destructor no complaints have been made as to dust, &c.

Sanitary Inspection.—Bakehouses and slaughter-houses are described as "good," and lodging-houses as "fair." Dairies and cowsheds are generally kept fairly clean, but in only two or three of the latter is the air space sufficient. A number of the byres are old, and it is difficult to have them altered, but in all new buildings the full air space—800 cubic feet per cow—will be insisted upon. The factories and workshops—156 in number—are almost all in satisfactory condition. The conversion of privy middens to the water-carriage system

continues: the Corporation make an allowance of £2 for each sanitary closet converted, and £1 for each insanitary closet. The Inspector (Mr. Rawling) gives full information regarding the work accomplished in his department. There were 198 notices served for the abatement of 524 nuisances. In two instances legal proceedings were successfully instituted. No attention appears to be given to the smoke nuisance.

Rishton.—(Area in acres, 2,985; Estimated Population, 7,100.)—*Medical Officer of Health*, JOHN BARR, M.B.; *Salary*, £30.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate.....	25·7	...	23·6	...	27·1
Death-rate	12·3	...	14·6	...	14·0
Zymotic death-rate	1·40	...	2·70	...	2·07
Phthisis ,,	0·98	...	1·40	...	0·95
Respiratory ,,	1·40	...	1·84	...	2·69
Rate of deaths under 1 year to 1,000 births.....	142	..	144	...	157

The birth-rate is 2·1 above last year's rate, and the death-rate shows a reduction equal to 2·3 per 1,000 of the population. The zymotic, phthisis, and respiratory rates show a satisfactory diminution, and the proportion of deaths under 1 year to 1,000 births is fractionally reduced. Diarrhœa gave rise to only 2 deaths, as compared with 8 in 1901. Measles and whooping cough did not cause a single fatality. Scarlet fever contributed 16 cases 1 death, typhoid fever 11 cases 1 death, typhus fever 1 case 1 death, diphtheria and membranous croup 11 cases 4 deaths, erysipelas 16 cases, and continued fever 10 cases 1 death. The typhus fever case was the first in the district for at least a quarter of a century. The patient, it is believed, contracted the disease in the West of Ireland, where he had been visiting. The Authorities endeavoured to get the patient into the Blackburn hospital, but

without success, the officials saying they had no room.

Hospital Accommodation.—An agreement is said to exist with the Blackburn Corporation to take infectious cases, “when they have room,” but it is unfortunate that the only time application was made for the admission of an urgent case room could not be found.

Disinfection.—No apparatus.

Water Supply.—Upland water passing through filter beds—copious, pure, and good.

Sewerage, Scavenging, &c.—A scheme for supplementing the existing tanks and irrigation area is in hand. Scavenging—left to contractors—appears to be well performed.

Sanitary Inspection.—Bakehouses are in good order, and slaughter-houses kept clean and well drained. Dairies and cowsheds—subject to regulations—comply fairly well with the requirements. Factories and workshops, on the whole, give satisfaction. The Inspector (Mr. Cornall) served 24 notices for the abatement of a like number of nuisances.

Royton.—(Area in acres, 2,145; Estimated Population, 15,050.)—*Medical Officer of Health*, RALPH YOUNG, M.D.; *Salary*, £50.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate	27·6	...	25·9	...	27·5
Death-rate	18·2	...	17·9	...	18·8
Zymotic death-rate.....	1·46	...	2·48	...	2·39
Phthisis ,, 	0·93	...	0·67	...	1·50
Respiratory ,, 	3·85	...	4·02	...	4·35
Rate of deaths under 1 year to 1,000 births.....	153	...	150	...	167

With the exception of the zymotic and respiratory rates

the mortality statistics do not compare favourably with the previous year, but the increases are only fractional. The birth-rate shows an increase of 1·7 per 1,000. Measles and diarrhœa gave rise to 10 and 4 deaths respectively, against 11 and 9 deaths in 1901. The former disease was prevalent in the early months of the year, and school closure was resorted to. Small-pox appeared in the district on several occasions, causing altogether 7 cases. The first case broke out on October 7th in a house much frequented by labourers, one of whom was said to have come from Hollinwood, where small-pox was at that time prevalent. The second case occurred at the end of the same month; the third was a doubtful case; and no further cases were notified until the 14th of December, and then three others occurred in rapid succession. All the cases were promptly removed to hospital, and the usual precautions taken. Scarlet fever, although prevalent in the first and last quarters, caused fewer cases than in the previous two years; 74 attacks took place with 2 deaths, as compared with 92 cases 7 deaths last year, and 125 cases 8 deaths in 1900. Diphtheria—associated with membranous croup—was the cause of 10 cases 6 deaths, and erysipelas contributed 20 cases.

Hospital Accommodation.—The seven cases of small-pox were isolated at the joint hospital at Cinder Hill, and four cases of scarlet fever were removed to the Oldham Corporation hospital at Westhulme.

Disinfection.—Steam apparatus at Oldham is available. Houses are fumigated with formaldehyde.

Water Supply obtained from Oldham.

Sewerage, Scavenging, &c.—The improvements at the sewage works, including the provision of additional tanks and filters, are almost completed. The Authority undertake scavenging; a refuse destructor is provided.

Sanitary Inspection.—House accommodation is inadequate for the wants of the district. An inspection of the bake-houses—48 in number—revealed only a few defects, and the slaughter-houses appear to be well kept. Dairies and cow-sheds are described as “clean and good,” but some are very old. The sanitary condition of the factories and workshops (118) is summarised thus:—cleanliness, fairly good; air space, abundant; and ventilation, satisfactory. Nuisances abated totalled 260, and notices served 61. In 3 instances legal proceedings followed smoke observations.

St. Annes-on-the-Sea.—(Area in acres, 3,342 ; Estimated Population, 7,914).—*Medical Officer of Health*, FRED BOOTH, M.D.; *Salary*, £80.

Per 1,000 of Population.	1902.	1901.	Mean of 10 years, 1892-1901.
Birth-rate.....	14·9 ...	17·5 ...	18·8
Death-rate	10·3 ...	13·7 ...	9·6
Zymotic death-rate.....	0·63 ..	1·59 ...	0·58
Phthisis ,,	1·38 ...	0·93 ...	0·72
Respiratory ,,	1·26 ...	1·19 ...	1·72
Rate of deaths under 1 year to 1,000 births.....	59 ...	181 ...	127

The birth-rate is low, and 3·9 per 1,000 less than the mean of the preceding decennial period. The mortality statistics gave satisfaction, the death-rate being reduced 3·4 as compared with 1901, the zymotic rate 0·96, and the proportion of infant deaths to births fell from 181 per 1,000 to 59. Excluding the deaths of 8 visitors a local rate of 9·3 is obtained. Only 1 death was ascribed to measles and 1 to diarrhoea. Scarlet fever was the cause of 11 cases, typhoid fever 10 cases 2 deaths, diphtheria 3 cases 1 death, erysipelas 2 cases, and puerperal fever 1 case. One of the typhoid fever cases occurred in a house where the conversion of the privy midden into a water closet was taking place, and there is little

doubt that the disturbance of the sewage-sodden soil was the source of the disease.

Hospital Accommodation.—The joint hospital at Moss Side, opened in April, “has already proved an inestimable boon.” Fifteen patients were removed, viz., typhoid fever 7, scarlet fever 6, and diphtheria 2. Provision is now available for small-pox cases at Elswick.

Disinfection.—The steam apparatus was used for the disinfection of 384 articles, and 35 rooms were fumigated either with sulphur or formaldehyde gas.

Water Supply obtained from the reservoirs of the Fylde Water Board. The water is very soft and quite free from all injurious pollution, but, especially during the summer months, it is often of a brownish colour, due to particles of peaty matter.

Sewerage, Scavenging, &c.—Sewage is discharged by gravitation into the sea without any previous treatment. Sewers have during the year been extended by 9,756 feet. Scavenging is performed by the Authority, refuse being burnt in the destructor.

Sanitary Inspection.—Bakehouses 15, including 4 in cellars, as a rule were found in a clean and sanitary state. As the existing slaughter-houses are far from satisfactory it is pleasing to note that a public abattoir, which is greatly needed, is now in course of erection. The inspection of farms has been regularly carried on, and improvements in the cleansing and whitewashing of the cowsheds have been noted. A special examination showed that the cubic capacity for each animal is in every instance below that prescribed by the regulations, namely, 800 cubic feet, and Dr. Booth now recommends the Council to take action to enforce this section, more especially in the worst cases. The requirements of the Factory and Workshop Act have received attention, and

the workshops appear to be well adapted for their several purposes. Eighty privy middens were abolished and water closets substituted, the Council allowing £2 towards the cost of conversion of each privy. The Inspector (Mr. Procter) dealt with 231 nuisances, 186 of which were abated.

Skelmersdale.—(Area in acres, 1,942; Estimated Population, 6,000.)—*Medical Officer of Health*, VINCENT O'REILLY, M.B.; *Salary*, £30.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate.....	40·5	...	36·6	...	35·2
Death-rate	20·1	...	18·5	...	18·2
Zymotic death-rate	1·16	...	1·22	...	1·02
Phthisis ,, 	1·33	...	1·22	...	0·83
Respiratory ,, 	4·16	...	4·56	...	5·71
Rate of deaths under 1 year to 1,000 births.....	119	...	124	...	159

An exceptionally high birth-rate is accompanied by a death-rate well above the County average. The former rate is the highest recorded since 1893, and the latter since 1895. The infantile mortality shows a satisfactory reduction as compared with previous years. Measles—prevalent from September to December—caused 5 deaths. Scarlet fever, of a mild type, gave rise to 26 cases, typhoid fever 11 cases (2 fatal), diphtheria 2 cases, erysipelas 5 cases, and puerperal fever 2 cases. In two of the typhoid fever cases the disease was due to drinking water from a polluted well, whilst another case was attributed to a defective drain.

Hospital Accommodation consists of a small cottage with 4 beds, but, as in the previous 2 years, no cases were removed.

Disinfection.—No apparatus.

Water Supply ample and good.

Sewerage, Scavenging, &c.—Sewage is treated at two outfall works—Skelmersdale and Penny Land. The Authority carry out scavenging in a satisfactory manner.

Sanitary Inspection.—Nine houses were condemned, 4 of which have since been made habitable. Bakehouses and slaughter-houses are clean, and dairies and cowsheds well kept. Factories and workshops, on the whole, comply with sanitary requirements. The Inspector (Mr. Corns) secured the abatement of 150 nuisances. One smoke observation was taken.

Southport (Borough).—(Area in acres, 5,144; Estimated Population, 48,500.)—*Medical Officer of Health*, JOHN J. WEAVER, M.R.C.S., D.P.H.; *Salary*, £475.

Per 1,000 of Population.	1902.	1901.	Mean of 10 years, 1892-1901.
Birth-rate.....	19·4 ...	19·4 ...	20·8
Death-rate	15·3 ...	16·0 ...	14·7
Zymotic death-rate.....	0·63 ...	1·61 ...	1·06
Phthisis ,,	0·82 ...	1·11 ...	1·16
Respiratory ,,	2·37 ...	2·11 ...	2·30
Rate of deaths under 1 year to 1,000 births	143 ...	166 ...	143

The estimated population is founded on the Census enumeration, supplemented by an estimate for the number of new houses erected and occupied during the year, after deducting any houses which have been pulled down or ceased to be occupied. This is considered a safer procedure than an assumed annual geometrically progressive increase of population, a method of estimation which led to the population for some years up to the time of the last Census being considerably over-estimated. In respect to sex distribution the proportion of males to females is 100 to 142. The birth-rate—exactly the same as in 1901—was below the mean of the preceding

decennial period. The gross death-rate was 15·3 against 16·0 in the previous year. After deducting the deaths of 103 visitors who came into the town in a precarious state of health and died after only a short stay, and adding the deaths belonging to the Borough which occurred in public institutions beyond the boundary a corrected death-rate of 13·82 per 1,000 is obtained. The average length of stay of the visitors above mentioned was 65 days from the date of arrival, varying from 11 months to 1 day. The zymotic rate is well below the average of previous years, and the phthisis rate (including both native and imported cases) is the lowest ever recorded. The number of infant deaths, equivalent to a rate of 143 per 1,000 registered births, is a considerable improvement over the rate for the previous year. On May 8th, 1902, the notification of chicken-pox, measles, and whooping cough, in addition to the diseases usually notified under the Notification Act, was made compulsory, on the same terms to medical men as the other notifiable diseases, and the cases notified after the date mentioned were chicken-pox 58, measles 602, and whooping cough 138, the cost of notification amounting to £80 18s.; the deaths from these diseases were nil, 7, and 5 respectively. Towards the end of the year measles—mild in character—prevailed epidemically throughout the Borough, and with the object of checking its progress several of the elementary schools were closed for a few weeks. Diarrhœa contributed only 6 deaths against 30 in the previous year. The number of cases (131) of scarlet fever notified was the lowest recorded during the last 10 years, excepting 1898 when there were 90 cases. Seventy per cent. of the patients were isolated in hospital. Three deaths were due to scarlet fever—2 in hospital. The typhoid fever notifications (31 with 4 deaths) were also below the average. Diphtheria, with 30 cases (6 fatal) showed a slight reduction as compared with the average number of previous years. It will be a matter of interest to note whether the policy of closing up surface man-holes, and adopting other means, such as Reeves' system of

sewer ventilation and Webb's ventilating lamps, will reduce the number of cases under this heading. The remaining notifications were—erysipelas 34, continued fever 1, and puerperal fever 3. The voluntary notification of phthisis adopted in September, 1901, remains in force, but only 8 cases were reported in the year under review.

Hospital Accommodation.—Recently an additional hospital pavilion (12 beds) has been erected in Moss Lane for the treatment of small-pox cases. The ordinary infectious hospital contains 36 beds, and a special pavilion with 12 beds, is maintained by the private schools in the Borough. One hundred and thirteen cases were removed, viz., scarlet fever 92, typhoid fever 12, diphtheria 6, chicken-pox 2, and continued fever 1.

Disinfection.—Steam apparatus is available. Houses fumigated with sulphurous acid gas numbered 191.

Water Supply, obtained from deep wells at Ormskirk. In character it is rather hard, but of exceptional purity and practically unlimited in quantity. The hardness is principally due to carbonate of lime, and is removed to a considerable extent by boiling.

Sewerage, Scavenging, &c.—Drainage is by gravitation into the sea, the sewer outlet causes a nuisance at Crossens Channel which is situate about three miles to the north of the town. Steam pumping is also being made use of to a small extent at the outlet, and small experimental bacterial filter beds are said to be in operation. The Reeves' system of sewer ventilation was maintained, and in addition 10 Webb's patent ventilating lamps have been provided. Drains tested with smoke numbered 425. Scavenging is satisfactorily performed by the Corporation, refuse being taken to the destructor.

Sanitary Inspection.—Four houses were found to be in a dirty and dilapidated condition, and in such a state as to be dangerous or injurious to health. Notices were served under Section 32 of the Housing of the Working Classes Act, 1890; three of the houses were put into thorough repair, and the other has not since been used as a dwelling-house. Bake-houses are in good condition. The five private slaughter-houses and the public abattoir at Blowick were always found in a satisfactory condition. Dairies, cowsheds, and milkshops have been regularly inspected, and the condition of milk-supplying cows looked to, both in the borough, and, by virtue of powers obtained in the Southport Corporation Act, 1900, outside the borough. Eighteen samples of milk were examined bacteriologically, and although in no case were the bacilli of tubercle found, in several there were indications of manurial contamination. In such cases the vendors were warned that greater cleanliness must be observed in the conduct of their business. Samples taken under the Sale of Food and Drugs Acts amounted to 115. Forty-two privy middens were abolished, and water closets substituted. The following table shows roughly the amount and nature of the work done by the Inspectors of nuisances :—

Nuisances reported to Health Committee..	961
Nuisance inspections not reported to Health Committee.....	13963
Notices served	842
Visits to workshops and bakehouses	672
,, dairies, cowsheds, and milkshops	281
,, common lodging-houses	1764
Visits under Shop Hours Act	81
Smoke observations	6
Enquiries into notifications of infectious disease.....	1028
Visits to ice cream vendors	36
,, piggeries	86
Inspection of house drains	248

Standish-with-Langtree. — (Area in acres, 3,266 ; Estimated Population, 6,413).—*Medical Officer of Health*, J. H. WILSON, M.D. ; *Salary*, £35.

Per 1,000 of Population.	1902.	1901.	Mean of 10 years, 1892-1901.
Birth-rate.....	41.1 ...	33.8 ...	38.4
Death-rate	17.7 ...	17.7 ...	19.7
Zymotic death-rate.....	2.02 ..	2.84 ...	3.02
Phthisis ,,	0.93 ...	1.10 ...	0.93
Respiratory ,,	3.27 ...	3.32 ...	4.32
Rate of deaths under 1 year to 1,000 births	136 ...	196 ...	185

As compared with the previous year, the birth-rate shows an increase of 7.3 per 1,000, while the general death-rate remains exactly the same. A gratifying reduction has taken place in the zymotic and infant rates. Measles—notifiable in this district—was the cause of 224 attacks, and 6 had a fatal termination. The disease attained its greatest prevalence in July and August, with 97 and 67 cases respectively. Amongst other measures taken to prevent the spread of measles, school closure was adopted. Scarlet fever also had an extensive prevalence, more especially during the last four months of the year ; altogether 124 cases were notified, but fortunately the disease was of a mild character, and only 2 deaths resulted. Typhoid fever gave rise to 8 cases, diphtheria and membranous croup 13 cases (1 fatal), erysipelas 16 cases, puerperal fever 3 cases, and continued fever 2 cases.

Hospital Accommodation.—The only hospital provision is a cottage (7 beds) reserved for small-pox.

Disinfection.—No special apparatus. Fumigation with sulphur is relied upon:

Water Supply. obtained from the Rivington reservoir of the Liverpool Corporation, is of excellent quality.

Sewerage, Scavenging, &c.—Sewage is treated in settling tanks and by bacterial filtration. Scavenging, performed by the Council in the Standish district and by contract in the Lower Ground district, is carried out satisfactorily.

Sanitary Inspection.—There is a great demand for houses for the working classes ; new property is well constructed, but the old property, of which a considerable quantity exists, leaves much to be desired. A closing order was made relating to one insanitary house. Bakehouses, slaughter-houses, factories, workshops, and dairies and cowsheds are all described as, on the whole, clean and well kept. As a result of 113 notices 86 nuisances were abated.

Stretford.—(Area in acres, 3,240 ; Estimated Population, 30,900).—*Medical Officer of Health*, W. J. HESLOP, F.R.C.S.Ed. ; *Salary*, £150.

Per 1,000 of Population.	1902.	1901.	Mean of 10 years, 1892-1901.
Birth-rate... ..	21·6 ...	20·0 ...	21·3
Death-rate	12·9 ...	14·7 ...	14·1
Zymotic death-rate.....	1·16 ...	2·06 ...	1·45
Phthisis ,,	1·00 ...	1·08 ...	1·15
Respiratory ,,	2·42 ...	2·26 ...	2·52
Rate of deaths under 1 year to 1,000 births.....	132 ...	148 ...	150

The birth-rate, although 1·6 higher than in the previous year, is still below the County average. The corrected death-rate is less than it has been for the last 20 years, and there was also a satisfactory reduction in the zymotic, phthisis, and infant death rates. Scarlet fever was somewhat prevalent, especially in Stretford and Talbot Wards ; altogether 91 cases were notified, with 5 deaths. Diphtheria caused 73 cases 10 deaths, as compared with 62 cases and 19 deaths in 1901 ; while measles contributed 5 deaths, whooping cough 6, typhoid

fever 3, and diarrhoea, including enteritis, 8 deaths. In consequence of Dr. Heslop's report that for a period of years the notification of measles has entailed a large amount of labour on the sanitary officials and considerable expense without any adequate return, the Council has removed this disease from the notifiable list. Although small-pox did not appear in the district precautions were taken, and chicken-pox, which often assimilates small-pox, was added to the schedule of diseases to be notified. The Medical Officer of Health has asked the local medical men to inform him of the occurrence of phthisis in order to be in a position to disinfect and take precautions to stop the spread of the disease. Of 45 bacteriological examinations 24 related to diphtheria, 10 to typhoid fever, and 11 to suspected cases of phthisis; positive results were obtained in 7, 4, and 7 cases respectively.

Hospital Accommodation was provided at Ladywell sanatorium for the following 108 cases, viz.:—scarlet fever 57, typhoid fever 12, diphtheria and membranous croup, 38, and puerperal fever 1.

Disinfection.—A Washington-Lyons steam apparatus is provided at the Empress Street Depôt, and here 1,600 articles were dealt with. The total rooms fumigated amounted to 273, and in 101 instances the room walls were stripped and washed. In addition the whole of the day schools were fumigated once or twice during the year. Dr. Heslop says that "in cases where it became necessary to disinfect a house it is impossible to do so in an efficient manner without turning the inmates into the street." To obviate this he recommends that a room be provided for their temporary accommodation.

Water Supply, obtained from the Manchester water-works, is good. The few remaining wells in the outskirts of the district are kept under observation.

Sewerage, Scavenging, &c.—The sewage farm continues to do its work satisfactorily. Scavenging is efficiently carried

out. It appears that there is a decrease in the number of dry ash places as well as wet ashpits emptied, the decrease being due to the conversion of privies into water closets, and to the substitution of galvanised dustbins.

Sanitary Inspection.—Although 200 statutory notices have been served, it has not been found necessary (with the exception of the smoke nuisances) to take legal proceedings. The details given of work done include 1,317 visits in respect of notices served and work in progress, 398 houses dealt with from various causes, 664 drains tested in respect of old property, 641 drains of new property tested, 73 sanitary fittings tested (old property), 282 sanitary fittings tested (new property), 283 foul privies and 153 ashpits abolished, &c. Cowsheds (24) and slaughter-houses have been well conducted. Attention has also been paid to bakehouses—which are good as far as cellar bakehouses go—laundries, factories, workshops, &c. The Inspector (Mr. Nuttall) reports that 89 smoke observations of 60 minutes' duration each have been made. The 4 minutes' time limit has been exceeded in 12 instances—in 4 notices for abatement were served, and in 4 other cases legal proceedings were taken; the total fines and costs imposed amounting to £12 0s. 6d.

Swinton and Pendlebury.—(Area in acres, 2,212; Estimated Population, 27,200.)—*Medical Officer of Health*, SAMUEL HOSEGOOD, M.R.C.S.; *Salary*, £90.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years. 1892-1901.
Birth-rate.....	33·9	...	29·9	...	32·0
Death-rate	18·6	...	19·2	...	19·7
Zymotic death-rate.....	3·45	...	3·99	...	3·29
Phthisis ,,	0·66	...	0·59	...	0·84
Respiratory ,,	4·96	...	4·03	...	4·64
Rate of deaths under 1 year to 1,000 births.....	146	...	212	...	190

The birth-rate is the highest recorded since 1894, and

exceeds by 1·9 per 1,000 the average of the 10 years 1892-1901. The general death-rate, although well above the County average, is reduced 0·6 as compared with last year, and 1·1 below the 10 years' average. The zymotic rate remains high, but the rate of deaths under 1 year to 1,000 births shows a striking reduction as compared with previous years. Diarrhœa showed a considerably less mortality, 16 deaths being recorded, against 38 in 1900, and measles, though largely prevalent throughout the year, caused 6 deaths only ; last year 7 deaths took place from this cause. In connection with this class of disease it may be remarked that whooping cough, which in 1901 caused 15 deaths, was not productive of a single fatality during the period under review—a circumstance quite unprecedented. The year 1902 has been chiefly noted for the very large number of infectious cases which have been recorded, a number greatly in excess of that for several previous years, and principally due to scarlet fever and diphtheria. Both have prevailed generally throughout the year, but more especially during the last quarter, when the climatic conditions were much more favourable to their development and spread. The question of the isolation of these diseases—that is, whether at home or by removal to hospital—has frequently during the year come up before the Council for discussion. They decided “to insist on the isolation of patients being carried out in their own homes wherever possible, and after instructions have been given for this to be done, that each infected house be kept under supervision by regular visitation by the Inspector, even though it entail additional assistance to carry it out.” Dr. Hosegood remarks :—“Looking at the question from the standpoint of practical experience, and taking into consideration the class of houses wherein most of these cases occur, I think it must be conceded that it is absolutely impossible to secure that thorough separation of the sick from the healthy at their own homes which is involved in the term ‘isolation,’ and which is obviously so essential in the particular diseases under notice. However desirous the parents may be of keeping healthy

children from contact with the infected persons, it is certain this object cannot be attained in a four or five-roomed cottage so well as in the wards of a hospital, where trained nursing, regular supervision, and, what is of more importance, complete and adequate isolation may always be expected. Again, whatever directions, instructions, or precautionary notices may be sent out from time to time during an epidemic, by way of warning or help on the part of the sanitary officials, are found in practice to be frequently evaded or ignored, and the inevitable consequence is that when once the disease obtains a foothold in certain areas, containing houses with only a limited accommodation, it is found to spread with great rapidity. The sections of the Public Health Act providing penalties against improper exposure of infected persons and articles have more than once been prominently brought under public notice, but in only about 2 cases have convictions been secured on account of the difficulty in bringing home the charges successfully. One notorious case was that of a woman who, having been properly informed that her child was suffering from scarlet fever, took it during the early period of its illness in a tramcar to Manchester. Possibly this case was responsible for scores of others, at the time untraceable. The fact is, and I state it with a full sense of my own responsibility in the matter, that in the greater proportion of the houses where we find these diseases existing (and recurring) it is quite impossible to guarantee a safe and effectual system of isolation, and I do not think, however elaborate a scheme of inspection may be devised, they can be satisfactorily dealt with therein when the surrounding conditions are considered." To scarlet fever were ascribed 373 cases and 25 deaths, and to diphtheria 225 cases 35 deaths. The former disease last year contributed 176 cases 6 deaths, and the latter 150 cases 26 deaths. In the South Ward, out of a total of 176 cases of scarlet fever and diphtheria, no less than 74 occurred in the Moorside, Sindsley, and Deans districts, whilst in Partington Lane and immediate neighbourhood there were 50 cases. The incidence of both

diseases was so marked in these districts, that for a period of three weeks at Easter two of the schools were closed with distinctly beneficial results. In comparison with previous years East Ward also showed a very large increase in both diseases. Dr. Hosegood recommended the closing of the particular school from which most of the cases in this area appeared to arise, but this course was not adopted. The Council deemed it sufficient to exclude scholars from infected houses. Typhoid fever had a reduced prevalence with 37 cases 12 deaths, against 50 cases 9 deaths in 1901. Erysipelas contributed 42 cases and puerperal fever 2 cases.

Hospital Accommodation.—The Ladywell sanatorium belonging to Salford is available, and 138 cases were removed, viz., scarlet fever 84, diphtheria 45, and typhoid fever 9. The necessity for making hospital provision for small-pox has been considered, and it is proposed to erect a hospital for that purpose jointly with Worsley.

Disinfection.—Articles of bedding, clothing, &c., are disinfected in the steam apparatus at Ladywell sanatorium. Rooms fumigated numbered 831, including 152 schoolrooms.

Water Supply good, obtained from Manchester Corporation.

Sewerage, Scavenging, &c.—Extensions at the sewage works are taking place. Eight new bacteria beds have been put into operation and others are being constructed. The smoke test was applied to many drains. The Authority carry out scavenging in a satisfactory manner.

Sanitary Inspection.—The general sanitary condition of the district is not as satisfactory as it might be, many of the dwellings being insanitary in themselves and the privies and ashpits in a deplorable state. Notices have been served relating to the defective paving and general condition of

several groups of streets. Bakehouses are described as satisfactory. Inspections under the Dairies, Cowsheds, and Milkshop Order have been made during the year from time to time, and also of the slaughter-houses, but nothing has called for any special intervention in connection with either. They are in the main well conducted, and only minor insanitary defects were discovered. Factories and workshops also underwent examination, and their condition was found to be good in respect to air space, light, ventilation, and cleanliness. A few notices served for slight alterations were complied with. Sixty privy middens were converted to the water-carriage system. The Inspector (Mr. Bleakley), as a result of 201 legal and 208 verbal notices, secured the abatement of 776 nuisances. Sixty-three smoke observations were taken.

Thornton.—(Area in acres, 2,996 ; Estimated Population, 3,493.)—*Medical Officer of Health*, F. S. RHODES, M.R.C.S.; *Salary*, £20.

Per 1,000 of Population.	1902.	1901.	Mean of 2 years, 1900-1901.	
Birth-rate.....	37·7	34·1	..	31·2
Death-rate	12·8	11·0	...	13·3
Zymotic death-rate... ..	1·14	0·94	...	1·90
Phthisis ,,	nil.	0·31	...	0·15
Respiratory ,,	2·29	1·57	...	1·81
Rate of deaths under 1 year to 1,000 births.....	106	92	...	154

The birth-rate is 3·6 per 1,000 above last year's average, and the death-rate shows an increase of 1·8. The zymotic and infant rates are also slightly higher. Dr. Rhodes states "in many instances mothers display a lack of knowledge and attention to the ordinary rules of health and dieting towards their offspring." Measles became notifiable on the 11th March, 1901, but so far only 6 cases have been notified, viz., 3 last year and 3 in the period under review. No death

resulted from this disease. Whooping cough—the cause of 3 deaths—was prevalent during the middle portion of the year. Mid-Thornton and Burn Naze were the districts principally affected. The Medical Officer of Health drew up a leaflet giving the precautions to be observed, and it was freely circulated in the district. Scarlet fever, mild in character, gave rise to 38 cases, mostly in the Works and Mid-Thornton districts. One case had a fatal termination. Legal proceedings were instituted in one case for allowing a child to attend school in the “peeling” stage. Typhoid fever contributed 3 cases, erysipelas 2 cases, and puerperal fever 1 case.

Hospital Accommodation.—Twenty-four cases of scarlet fever were removed to the joint hospital at Moss Side, opened in April, and 1 case of typhoid fever—imported from Blackpool—was treated at that Borough’s sanatorium.

Disinfection.—No apparatus. Forty-six houses underwent sulphur fumigation.

Water Supply is derived mainly from the reservoirs of the Fylde Joint Board. It is once more pointed out that Little Thornton district (Stanah) is still in want of an efficient supply.

Sewerage, Scavenging, &c.—The sewerage system is again described as “bad,” the ditches and dykes being simply open sewers. A commencement has, however, been made with the new outfall works near Cleveleys. Individual owners of property and tenants are responsible for the removal of ashpit refuse, consequently inattention often is complained of. This work ought to be carried out under the supervision of the Council’s officials.

Sanitary Inspection.—Bakehouses and slaughter-houses, on the whole, gave satisfaction. Dairies and cowsheds are regularly inspected, and many improvements have recently been made. Better sanitary conveniences have been provided at some of the factories and workshops. The Inspector

(Mr. Fenton) reports on 81 nuisances abated after the service of 53 notices. "Constant" smoke observations are taken.

Tottington.—(Area in acres, 2,543; Population, Census 1901, 6,118).—*Medical Officer of Health*, A. H. POOLE, L.R.C.P.; *Salary*, £40.

Per 1,000 of Population.	1902.		1901.		Mean of 3 years, 1899-1901.
Birth-rate.....	17·9	...	22·0	...	25·3
Death-rate ..	12·4	...	15·8	...	15·1
Zymotic death-rate.....	0·49	...	1·30	...	1·35
Phthisis ,,	1·47	...	0·98	...	0·89
Respiratory ,,	3·26	...	3·59	...	3·73
Rate of deaths under 1 year to 1,000 births.....	100	...	133	...	107

With the exception of the phthisis rate all the averages are below those recorded last year. The birth and death rates were reduced 4·1 and 3·4 per 1,000 respectively; the zymotic rate fell 0·81, the respiratory rate 0·33, and the rate of deaths under 1 year to 1,000 births was 100 against 133. There were only 3 deaths ascribed to the principal zymotic diseases, viz., 1 each to scarlet fever, whooping cough, and diarrhoea. Twenty-one notifications were received—scarlet fever 11, typhoid fever 8, and diphtheria 2. One of the typhoid fever cases was very probably caused by the offensive condition of a privy midden. On account of scarlet fever a Sunday school was closed for a short period.

Hospital Accommodation.—The joint hospital scheme (Radcliffe, &c.) has practically been in abeyance. Temporary provision, however, has been made at Ainsworth for small-pox.

Disinfection.—No apparatus. Seventeen houses were fumigated with sulphur.

Water Supply, obtained from Bury Joint Board, is

satisfactory as regards quantity, but occasionally the quality is indifferent.

Sewerage, Scavenging, &c.—Sewage undergoes treatment by precipitation and subsequent land filtration. Scavenging—left to the householders—is unsatisfactory. From the 31st of March, 1903, the Council have contracted for the emptying of ashpits, and the proper execution of this work will no doubt be conducive both to the health and convenience of the inhabitants.

Sanitary Inspection.—Bakehouses (5) and slaughterhouses (3) are in fairly good condition—a few minor defects were remedied. Dairies and cowsheds appear “clean and well kept.” The majority are, however, ancient and deficient in means of ventilation and lighting. Factories and workshops (12) receive constant visits, and the recommendations of the Medical Officer of Health regarding increased sanitary accommodation have in several instances been carried out. The Inspector (Mr. Kenyon) served 156 notices for the abatement of 149 nuisances. Smoke observations numbered 32.

Trawden.—(Area in acres, 6,815; Estimated Population, 2,727.)—*Medical Officer of Health*, J. J. IDESON, L.S.A. (Lond.); *Salary*, £20.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate.....	21·2	...	21·9	...	30·4
Death-rate	11·7	...	12·8	...	17·6
Zymotic death-rate.....	1·46	...	nil.	...	1·49
Phthisis ,,	0·73	...	1·13	...	1·16
Respiratory ,,	1·83	...	2·65	...	4·16
Rate of deaths under 1 year to 1,000 births.....	86	...	137	...	169

The statistics presented by Dr. Ideson are marked by

decreases in the birth and death rates equal to 9·2 and 5·9 per 1,000 of the population respectively, as compared with the mean of the 10 years 1892-1901. The zymotic, phthisis, and respiratory rates, and the proportion of deaths of infants under one year to 1,000 births also show satisfactory reductions, the latter rate being the lowest recorded. The zymotic rate was wholly due to 3 deaths from scarlet fever and 1 death from measles. Last year (1901) only 2 notifications were received, but for the period under report 52 cases came under notice. Small-pox was responsible for 5 attacks in November and December; prompt removal to hospital took place. Scarlet fever, prevalent in the latter part of the year, contributed 37 cases, typhoid fever 4, typhus fever 3, and erysipelas 3.

Hospital Accommodation nil. The 5 small-pox cases were admitted into the Colne borough hospital.

Disinfection.—No apparatus.

Water Supply good, but inadequate in summer. Steps are now being taken to increase the supply.

Sewerage, Scavenging, &c.—In July the Ribble Joint Committee complained of an unsatisfactory effluent from the outfall works. It was ascertained that this was due to a leakage from the tank, which was at once stopped. Scavenging, as performed by contract, gives satisfaction, the refuse being tipped into disused quarries.

Sanitary Inspection.—Some of the property in the district is old and not in good condition. Bakehouses, slaughterhouses, factories, dairies and cowsheds are all described as “good.” Unfortunately, dairy, &c., regulations have not yet been adopted. Only a few nuisances came under observation, and it was not necessary to issue any statutory notices.

Turton.—(Area in acres, 17,335 ; Estimated Population, 12,400).—*Medical Officer of Health*, JAMES ROBINSON, M.D., L.S.Sc. ; *Salary*, £60.

Per 1,000 of Population.	1902.	1901.	Mean of 10 years, 1892-1901.
Birth-rate...	22·3	22·2	21·9
Death-rate	13·2	12·4	13·4
Zymotic death-rate.....	1·61	0·88	0·98
Phthisis ,,	0·32	0·97	1·10
Respiratory ,,	2·82	1·94	2·95
Rate of deaths under 1 year to 1,000 births.....	72	72	126

The birth-rate remains practically the same as last year, while the death-rate shows an increase of 0·8 per 1,000. The zymotic rate is almost double the previous year's rate, due mainly to 11 deaths from diphtheria. The infantile mortality, however, was lower than in any previous year, with two exceptions (1901 and 1894), when it was exactly the same. Measles, although the cause of only 1 death, prevailed in varying intensity during the year, and in December it was thought advisable to close a school at Eagley. Two deaths were ascribed to whooping cough. Scarlet fever, with 85 cases 5 deaths, was present in all parts of the district throughout the year, the greatest prevalence being from January to May. Diphtheria—associated with membranous croup—gave rise to 46 cases 11 deaths; Eagley, Dunscar, and Bromley Cross produced most cases in June, and the Medical Officer of Health attributes the origin to have been in children attending school from infected areas in a neighbouring district; with 3 exceptions all the children affected had been in attendance at Eagley schools. Typhoid fever was responsible for only 2 cases (1 fatal), and erysipelas contributed 6 cases.

Hospital Accommodation.—In consequence of the extensive prevalence of infectious disease in the County Borough of Bolton no cases could be admitted into their hospital from this

district. The question of hospital accommodation has engaged the serious attention of the Council, and their deliberations will in all probability result in the Darwen hospital being extended to meet the requirements of both Darwen and Turton. Small-pox hospital provision has also been under discussion, but so far no agreement has been arrived at.

Disinfection.—No apparatus. Sulphur fumigation of 42 houses took place.

Water Supply is obtained for the greater part of the district from the Bolton Corporation. An improvement in the quality of the water has been effected by the completion of filtration tanks at the Dingle reservoir. A few outlying houses have to rely on springs or shallow wells.

Sewerage, Scavenging, &c.—Sewage receives treatment at two outfall works—Eagley and Bradshaw. From each of these works the Mersey and Irwell Joint Committee's officials have obtained on one occasion an unsatisfactory effluent. Scavenging is satisfactorily performed by the Authority, the refuse being disposed of on tips.

Sanitary Inspection.—Bakehouses and slaughter-houses appear to be well kept, and dairies and cowsheds are described as "fair." The factories and workshops generally are satisfactory as regards cleanliness, air-space, ventilation, and drainage. The conversion of privy middens to the water-carriage system is gradually being carried out, 42 being so converted during the year. Dr. Robinson points out an anomaly which exists in relation to this question. The Council offer a premium upon the conversion of existing ashpits to the water-carriage system, whilst at the same time they permit houses to be erected with the old and pernicious ashpit. Sixty-seven notices were served requiring nuisance abatement. Smoke observations numbered 31.

Tyldesley - with - Shakerley.—(Area in acres, 2,490 ; Estimated Population, 15,500).—*Medical Officer of Health*, B. BLACKMORE, M.R.C.S. ; *Salary*, £60.

Per 1,000 of Population.	1902.	1901.	Mean of 10 years, 1892-1901.
Birth-rate.....	32·3 ...	34·1 ...	35·3
Death-rate	14·8 ...	18·5 ...	18·0
Zymotic death-rate.....	2·19 ...	3·08 ...	3·06
Phthisis ,,	0·58 ...	0·45 ...	0·98
Respiratory ,,	3·61 ...	4·19 ...	4·13
Rate of deaths under 1 year to 1,000 births.....	143 ...	201 ...	172

The birth and death rates, with the exception of 1894, were both lower than any recorded in the preceding decennial period. The infantile mortality was also much below the average. The zymotic rate showed a reduction as compared with last year, mainly by the diminution in the number of deaths from diarrhoea, viz., 6 against 26. Measles gave rise to 9 deaths against 2 in 1901, and whooping cough 1 death against none in the previous year. Scarlet fever broke out at the end of the year in a most violent form. The first six months were of a fairly normal character, there being 27 cases reported ; the second half of the year saw 153 cases, August being the lowest with 8, whilst December had 91, there being a sudden rise from 19 in November. The total cases for the year therefore were 180, and 4 had a fatal termination. Forty-six per cent. were removed to hospital. A special inspection of the schools and scholars took place in December, and at one school the Medical Officer of Health found several children desquamating ; it need hardly be stated that a large number of cases occurred amongst the children attending that school. Three prosecutions followed against parents for sending their children to school whilst suffering from infectious disease, and in each case a fine of 10s. and costs was inflicted. The schools were all closed. Typhoid fever was the cause of 24 cases 11

deaths, diphtheria 20 cases 3 deaths, erysipelas 11 cases, and puerperal fever 2 cases.

Hospital Accommodation.—The joint sanatorium at Astley was used for the isolation of 102 cases from this district—83 scarlet fever and 19 typhoid fever.

Disinfection.—The necessity of providing some efficient disinfecting apparatus is strongly urged. Houses fumigated numbered 185, and several schools were also disinfected.

Water Supply.—During the summer months there was a serious derangement of the water supply, but now a good and efficient supply for all purposes is assured by a special connection at the northern boundary of the district to the Thirlmere pipe of the Manchester Corporation.

Sewerage, Scavenging, &c.—Sewage is treated by precipitation and filtration. The pollution of a small brook at Astley was complained of several times, but the cause of complaint has now been removed, the brook being wholly diverted into the main sewer. The Authority perform scavenging in a satisfactory manner.

Sanitary Inspection.—Three houses were condemned and 40 others repaired or made into through houses; in one instance legal proceedings were instituted but unsuccessfully. Bakehouses, slaughter-houses, lodging-houses, and dairies and cowsheds are under constant supervision, and with few exceptions are in fair order. One dilapidated cowshed was replaced by a new structure. A few of the factories and workshops have been improved by more frequent limewashing and the provision of additional lavatory accommodation. Dilapidated and offensive closets and ashpits repaired amounted to 113, including 72 converted to the water-carriage system. Notices served numbered 292, and nuisances abated 268. Smoke observations are taken, but details are not available.

Ulverston.—(Area in acres, 3,172; Estimated Population, 10,060).—*Medical Officer of Health*, G. H. PATTERSON, M.R.C.S., D.P.H.; *Salary*, £90.

Per 1,000 of Population.	1902.	1901.	Mean of 10 years 1892-1901.
Birth-rate.....	26·3 ...	28·3 ...	26·7
Death-rate	18·0 ...	15·6 ...	16·4
Zymotic death-rate.....	2·58 ...	1·09 ...	0·96
Phthisis ,,	1·29 ...	0·89 ...	1·20
Respiratory ,,	3·28 ...	2·58 ...	3·01
Rate of deaths under 1 year to 1,000 births.....	128 ...	129 ...	124

The birth-rate which declined 2·0 per 1,000 as compared with last year, was fractionally lower than the mean of the preceding decade. The general death-rate is the highest since 1892, and the zymotic rate exceeds by 1·62 the average of the 10 years 1892-1901. For the second year measles did not cause a single fatality, but whooping cough contributed 10 deaths, against none in 1901. Diarrhœa gave rise to only 1 death as compared with 5 in the previous year. Scarlet fever broke out in the spring, but subsided in the summer, only to re-appear with renewed vigour in the autumn and winter. The schools where the majority of the infected children attended were closed for three weeks in May, and in October closure was again applied on two occasions owing to the recrudescence of the epidemic, combined with the co-existing epidemic of diphtheria. Scarlet fever altogether caused 101 cases 1 death, and diphtheria 111 cases and 13 deaths. The epidemic of diphtheria really commenced in September; up to that time only 6 cases had been notified, then a female farm servant, just arrived from London, was found to be suffering from the disease. As the hospital had at that time no available beds for diphtheria the case was isolated in the harness-room, which is in close proximity to the farm premises. The next case was a relation of a farmer,

who had been a frequent visitor to the farm. From this time certificates were received as follows :—September 18, October 38, November 25, and December 25. It was found that a large proportion of the sufferers in the first notified cases obtained either the whole or some part of their milk from the farm in question, and a bacteriological examination of a sample revealed the bacillus. How the bacillus gained admittance to the milk is difficult to say; the cows appeared perfectly healthy, and no one actually living in the house had the disease. The milk supply from the farm was stopped. The disease, having once become fairly established, no doubt, also spread through school attendance, and closure undoubtedly had a marked effect in checking the spread of the infection. Typhoid fever contributed 3 cases 1 death, and erysipelas 16 cases. Phthisis is voluntarily notifiable.

Hospital Accommodation.—The joint hospital at High Carley, Pennington, was used for the isolation of 19 cases of scarlet fever and 16 cases of diphtheria.

Disinfection. — No apparatus. Houses fumigated numbered 157.

Water Supply abundant, and quality fairly good. The usual complaints were received when the reservoir was low that the water had a “fishy” taste. This was accounted for by the presence of an excess of vegetable matter. Some of the feeders of the reservoir are open to contamination from various sources, and Dr. Patterson again requests that steps be taken to obviate any possible source of danger.

Sewerage, Scavenging, &c.—Sewage, after subsidence in tanks, is discharged into the sea. Systematic flushing and better ventilation of the sewers are advocated. Scavenging, in the hands of the Authority, is fairly well performed, but more frequent emptying of ashpits is required.

Sanitary Inspection.—One house was condemned as unfit for human habitation. Bakehouses, slaughter-houses, lodging-houses, and dairies and cowsheds all appear to be in fair condition. Water closets were provided in 22 instances in lieu of privy middens. The Inspector (Mr. Whitlow) secured the abatement of 103 nuisances. Notices served amounted to 36.

Upholland.—(Area in acres, 4,686 ; Population, Census 1901, 4,773).—*Medical Officer of Health*, J. LLOYD JOHNSTONE, M.R.C.S. ; *Salary*, £40.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate.....	33·9	...	36·6	...	36·6
Death-rate	19·2	...	18·0	...	18·6
Zymotic death-rate....	1·25	...	3·56	...	1·76
Phthisis ,,	1·04	...	0·83	...	0·97
Respiratory ,,	4·81	...	2·93	...	4·39
Rate of deaths under 1 year to 1,000 births.....	135	...	165	...	129

A decline in the birth-rate equal to 2·7 as compared with last year is accompanied by an increase of 1·2 per 1,000 of the population in the death-rate. The zymotic and infant rates, however, both show satisfactory reductions. Measles and whooping cough each contributed 2 deaths, and diarrhoea was the cause of 1 fatality. The most noticeable feature of the year was an epidemic of scarlet fever. The disease commenced in the Dig Moor district, at the end of January, and continued hereabouts during February, when it became quiescent. In May the disease assumed epidemic proportions, appearing first in Newgate and Hall Green, then in the more populous parts of the district, and it necessitated the closure of the Central schools for a period of seven weeks. Altogether 64 cases were reported, and 1 death took place. In dealing with the outbreak isolation at home was practised, but in cottages the attempt at complete separation proved

abortive, and Dr. Johnstone states there was an inveterate tendency to allow children imperfectly cured to go to school or play about with companions. Apart from the disease mentioned very little infectious sickness came to the knowledge of the sanitary officials, typhoid fever causing only 3 cases, diphtheria 1 case, and erysipelas 7 cases.

Hospital Accommodation nil. As a result of a report of the Medical Officer of Health respecting the prevalence of small-pox in an adjacent district, the Council decided to obtain a hospital tent with administrative block, which could be rapidly erected in case small-pox broke out in the district.

Disinfection.—No apparatus. Infected houses are as a rule fumigated with formaldehyde.

Water Supply reported as continuous and good.

Sewerage, Scavenging, &c.—Sewage of the Upholland and Tontine districts is treated by precipitation and filtration, and that of the western division on bacteria beds. The small works at Tontine have been completely altered, the old tank having been replaced by a septic tank, and a cinder continuous filter added. Scavenging receives attention from the Council's workmen, and is described as fair; the refuse is used for agricultural purposes.

Sanitary Inspection.—Bakehouses, with one exception, and slaughter-houses are well kept. Dairies and cowsheds—subject to regulations—are only fair, many of the latter being wanting in ventilation, air-space, &c.; the average at present is only about 400 cubic feet per cow. There are no factories in the district and the workshops inspected revealed no serious defects. Twenty-six notices resulted in the abatement of 21 nuisances, consisting chiefly of blocked drains, untrapped gullies, and dilapidated closets.

Urmston.—(Area in acres, 992; Estimated Population, 7,000).—*Medical Officer of Health*, G. E. FRYER, M.R.C.S.; *Salary*, £50.

Per 1,000 of Population.	1902.		1901.		Mean of 7 years, 1895-1901.
Birth-rate.....	23·4	...	21·2	...	23·2
Death-rate	12·2	...	13·4	...	11·6
Zymotic death-rate.....	2·00	...	1·51	...	1·84
Phthisis ,,	0·28	...	0·75	...	0·66
Respiratory ,,	2·28	...	2·27	...	1·98
Rate of deaths under 1 year to 1,000 births.....	85	...	200	...	118

The mortality statistics for the year under review are marked by an exceptional decrease in the infantile mortality, viz., 85 per 1,000 births as compared with 200 in 1901. The general death-rate declined 1·2 per 1,000 of the population, but the zymotic rate was slightly increased. Measles, although the cause of only 1 death, was prevalent in the later months of the year, and it was deemed advisable to close one of the schools. Whooping cough gave rise to 4 deaths, and diarrhoea 2 deaths. Only 26 notifications were received, viz., scarlet fever 12, and diphtheria—associated with membranous croup—14. From the former disease 3 deaths took place, and 4 diphtheria cases proved fatal. Bacteriological examinations in the diphtheria cases were of value.

Hospital Accommodation.—Five beds are reserved at the Ladywell sanatorium belonging to the Salford Corporation, and 2 further beds are now retained for the use of this district at the small-pox hospital at Drinkwater Park. Nine patients were removed during the year, 3 suffering from scarlet fever, and 6 from diphtheria.

Disinfection.—Steam apparatus at the sanatorium is available. Houses fumigated with formaldehyde gas.

Water Supply good, obtained from Manchester. A few wells of doubtful character have been closed.

Sewerage, Scavenging, &c.—Sewage is treated at the Urmston and Flixton joint works in covered septic tanks, and by filtration through cinder beds. The Authority perform scavenging in a satisfactory manner.

Sanitary Inspection.—Bakehouses and slaughter-houses are described as good, but the dairies and cowsheds do not give satisfaction. Many of the latter are sadly deficient in air space. No complaints made regarding the sanitary condition of the workshops inspected. One hundred and fifty nuisances were abated, after the issue of only 30 notices.

Walton-le-Dale. — (Area in acres, 4,658; Population, Census 1901, 11,271).—*Medical Officer of Health*, R. TRIMBLE, M.D., D.P.H.; *Salary*, £50.

Per 1,000 of Population.	1902.	1901.	Mean of 10 years 1892-1901.
Birth-rate.....	27·5 ...	24·3 ...	30·0
Death-rate	14·3 ...	11·4 ...	17·5
Zymotic death-rate.....	1·06 ...	1·86 ...	2·27
Phthisis ,,	0·88 ...	0·88 ...	1·21
Respiratory ,,	1·96 ...	1·68 ...	3·08
Rate of deaths under 1 year to 1,000 births.....	116 ...	105 ...	168

As compared with the previous year the birth and death rates show increases of 3·2 and 2·9 per 1,000; the zymotic rate is reduced 0·8, but a slight increase took place in the rate of deaths under one year to 1,000 births. Three deaths were ascribed to measles, and diarrhoea caused 1 death. Owing to the prevalence of the former disease, together with several cases of chicken-pox and whooping cough, one of the schools was closed in February for a month. Scarlet fever, mostly of a mild type, was the cause of 105 cases and 5

deaths, against 91 cases and 4 deaths in 1901. Fifty-eight of the attacks took place in the Bamber Bridge district. This disease has been very prevalent for three years, only falling away at short intervals. Typhoid fever contributed 12 cases 2 deaths. One of the attacks—at a farmhouse—was due to drinking contaminated water. The slop water ran into a small tank, the overflow water simply soaking into the ground only a short distance away from the well supplying drinking water. Dr. Trimble at once suspected the water, and the analysis thereof showed it to be “highly polluted and quite unsuitable for drinking and domestic purposes.” Diphtheria and membranous croup gave rise to 8 cases 1 death, erysipelas 10 cases, and puerperal fever 2 cases.

Hospital Accommodation.—Five cases of scarlet fever were removed to the Bradkirk hospital, the total cost of treatment being £23 17s. An application was made to borrow the sum of £5,000 for the erection of an isolation hospital, and, plans having been submitted to the Local Government Board, an Inquiry was held on the 18th December. The undertaking given to the County Council in 1895 will therefore shortly be redeemed.

Disinfection.—Hot air apparatus available. Fifty-seven houses were fumigated.

Water Supply is described as good.

Sewerage, Scavenging, &c.—The effluent from the sewage works appears to have been of a satisfactory character. Scavenging, now partially done by the Council’s men, is better than formerly.

Sanitary Inspection.—The insanitary condition of property at Lark Hill, Higher Walton, was reported upon in July. Bakehouses and slaughter-houses, on the whole, are clean and in good order. During the year 7 of the farms have been supplied with pure water in lieu of doubtful supplies.

The factories and workshops examined complied with sanitary requirements. The Inspector (Mr. Moxham) reports on nuisances dealt with on 94 premises.

Wardle.—(Area in acres, 3,192; Population, Census 1901, 4,427.)—*Medical Officer of Health*, G. MACGILL, L.R.C.P.E.; *Salary*, £40.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate.....	16·4	...	18·7	...	20·6
Death-rate	11·9	...	14·0	...	14·5
Zymotic death-rate.....	1·58	...	0·67	...	1·25
Phthisis ,,	0·67	...	1·12	...	1·05
Respiratory ,,	1·80	...	4·29	...	3·14
Rate of deaths under 1 year to 1,000 births.....	219	...	96	...	131

The birth-rate is the lowest recorded, and the death-rate, with the exception of 1898, is lower than in any year during the preceding decennial period. The zymotic rate and the proportion of infant deaths to births are, however, both above the average, the latter being exceedingly high. Measles was somewhat prevalent in the first half of the year, but fortunately only 3 deaths resulted. Whooping cough also caused 3 deaths, and diphtheria 1 death. Sixteen cases of scarlet fever were notified, against 22 in the previous year. This disease was confined solely to the upper portion of the district, and, with one exception, to children attending the same school. The outbreak showed itself early in December, and the managers of the school anticipating an order of the Council closed the school a few days earlier than the usual holidays. Diphtheria gave rise to 3 cases, erysipelas 1 case, and continued fever 1 case.

Hospital Accommodation.—Much delay has taken place in the matter of the proposed joint hospital.

Disinfection.—No appliances.

Water Supply is derived from the Rochdale Corporation, and, though abundant and good in itself, complaints as to muddiness, in the upper portion of the district, are still made.

Sewerage, Scavenging, &c.—The Mersey and Irwell Joint Committee complained of the poor effluent from the Lower and Higher sewage works. At the former works new double contact beds have been provided, and improvements have also been made at the Higher works. Scavenging, as performed by the Authority, gives satisfaction.

Sanitary Inspection.—Six houses, condemned as unfit for human habitation, were demolished. The only bakehouse in the district is well kept, and slaughter-houses are also in good order. There are no dairies; the farms—regularly inspected—comply, on the whole, with sanitary requirements. Factories and workshops gave rise to no complaints. In September new bye-laws were sanctioned relating to slaughter-houses, lodging-houses, new streets, cleansing of privies, &c. Fifteen notices were required for the abatement of a like number of nuisances.

Waterloo-with-Seaforth.—(Area in acres, 952; Estimated Population, 24,236.)—*Medical Officer of Health*, W. S. LIMRICK, L.R.C.P.E.; *Salary*, £100.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years 1892-1901.
Birth-rate.....	26·2	...	26·4	...	26·1
Death-rate	12·0	...	12·1	...	12·8
Zymotic death-rate.....	0·49	...	1·25	...	1·70
Phthisis ,,	0·70	...	0·69	...	0·90
Respiratory ,,	2·35	...	1·90	...	2·27
Rate of deaths under 1 year to 1,000 births.....	124	...	121	...	136

The birth and death rates remain almost stationary

varying only fractionally from those recorded last year, and from the mean of the 10 years 1892-1901. The zymotic rate, however, is 0·76 below last year's rate, and is the lowest recorded during the decennial period. During the latter part of the year an outbreak of measles occurred, which specially affected the infants' departments of three schools in the Seaforth district and one in the Waterloo district. It was decided to close these schools for a time, and disinfection of the premises was carried out. Fortunately the disease was mild in character, and only 1 death resulted. Diarrhœa gave rise to 5 deaths, and whooping cough 2 deaths. One case of small-pox occurred at Seaforth at the close of the year; the patient was removed to hospital, and prompt measures were taken to prevent the further spread of the disease. Scarlet fever had a somewhat extensive prevalence, 116 cases being reported against 60 in the previous year, and 77 in 1900. Eighty cases occurred in Seaforth and 36 in Waterloo; only 1 death resulted. Fifty per cent. of the scarlet fever cases received hospital isolation. Typhoid fever was responsible for 16 cases 1 death, diphtheria and membranous croup 12 cases 2 deaths, erysipelas 16 cases, and continued fever 1 case.

Hospital Accommodation.—Seventy-one cases were removed to the Bootle Corporation hospital at Linacre, viz., small-pox 1, scarlet fever 59, typhoid fever 7, and diphtheria 4. The expenditure connected with the removal of patients was as follows:—Annual contribution for maintenance of hospital, £454 4s. 1d.; cost of maintenance of patients, £341 6s. 2d.; total, £795 10s. 3d.

Disinfection.—The steam apparatus was used 262 times for the disinfection of 3,322 articles; 183 rooms were fumigated with sulphur.

Water Supply said to be “good.”

Sewerage, Scavenging, &c.—Sewage is discharged into the estuary of the River Mersey. The smoke test was applied to

the drains of 337 houses, and those found to be defective were relaid, repaired, or reconstructed. Scavenging, performed partly by the Authority and partly by contract, is efficiently carried out.

Sanitary Inspection.—A systematic inspection has been made of the houses in sixteen streets, in various parts of the district, and many insanitary conditions were discovered, due, in a great measure, to the careless habits of the occupiers. Bakehouses—several are underground—are, on the whole, in good order. Dairies and cowsheds also are in fair condition, but overcrowding of animals was found in several instances. Forty-four samples of milk were submitted for bacteriological examination, with the result that 3 were found to be tubercular, 29 contained the bacillus coli communis, and 5 the bacillus enteritidis sporogenes. With reference to the samples found to be tubercular, on two farms a veterinary surgeon examined the cows, and the tuberculin test being applied certain cows re-acted; in respect of the third sample the milk was obtained from a farm outside the district, and the local authority were communicated with. One hundred and ten visits were paid to factories and workshops. A large number of defective water closets, soil-pipes, waste pipes, &c., were put into a proper state of repair. The Inspector (Mr. Cannell) reports on a large amount of work accomplished in his department, including the following :—

Number of houses inspected or re-inspected	2976
„ notices served.....	707
„ letters and reports <i>re</i> nuisances..	188
„ drainage defects remedied	698
„ defective ashpits repaired.....	82
„ defective waste pipes trapped, &c.	188
„ defective water closets, &c., repaired	456
„ dilapidated houses dealt with ...	157
„ smoke observations	12

Westhoughton.—(Area in acres, 5,560 ; Estimated Population, 14,691).—*Medical Officer of Health*, F. TYNDALL, L.R.C.P. (Lond.) ; *Salary*, £40.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years 1892-1901.
Birth-rate.....	32·8	...	32·5	...	35·8
Death-rate	15·7	...	16·1	...	17·9
Zymotic death-rate.....	2·38	...	2·56	..	2·81
Phthisis ,,	0·54	...	0·69	...	0·67
Respiratory ,,	4·22	...	4·15	...	4·14
Rate of deaths under 1 year to 1,000 births... ..	171	...	170	...	165

The decline in the birth-rate, which has taken place continuously for the previous 6 years, was arrested during the year under review, but the increase was only fractional as compared with 1901. The death-rate, with two exceptions, was the lowest recorded during the last ten years. The zymotic, phthisis, respiratory, and infant rates varied only slightly from previous years. Measles and whooping cough—the cause of 8 and 6 deaths respectively—were prevalent, the former more especially in the first half of the year, when it was considered necessary to recommend school closure. Diarrhœa contributed 4 deaths. Small-pox gave rise to 8 cases ; the first was for a time unrecognised as small-pox, and 2 other cases occurred in the same house. Later on 5 other persons were attacked. All the patients were removed to temporary hospital, the houses thoroughly disinfected, and contacts re-vaccinated. The most marked feature of the year was an epidemic of scarlet fever. Starting in the fourth quarter of 1901, it continued to prevail up to the end of the year under report. Altogether 277 cases were notified, and 12 deaths took place. In several cases parents were summoned before the District Council and cautioned for not taking the necessary precautions to prevent the spread of the disease. Typhoid fever was responsible for 13 cases 1 death, typhus fever 1 case, diphtheria and membranous croup 42

cases 4 deaths, erysipelas 14 cases, continued fever 5 cases, and puerperal fever 12 cases.

Hospital Accommodation.—The erection of the joint hospital is steadily being proceeded with. Owing to the invasion of the district by small-pox the Council first hired an isolated cottage and afterwards purchased and erected a corrugated iron hospital for 8 beds.

Disinfection.—No apparatus. House fumigations numbered 218.

Water Supply, satisfactory both in quantity and quality, obtained from the Bolton Corporation. Two farms, previously dependent on wells, are now supplied from the mains.

Sewerage, Scavenging, &c.—The district is sewered in four sections, and the sewage is treated by chemical precipitation and irrigation. Two additional sludge beds have been constructed during the year. For scavenging purposes the district is divided into 13 sub-districts and the work is let to farmers, who use most of the refuse on the land, and deposit the remainder on the public tip.

Sanitary Inspection.—Many old houses, in some cases damp and of insufficient cubic area, are rapidly becoming unfit for human habitation, and many back yards are very insanitary through being fouled with excremental filth ; attention is also drawn to the state of several back passages. Bakehouses and slaughter-houses are in satisfactory condition, and factories and workshops comply with the requirements. Dairies and cowsheds—regularly visited—are fairly well kept ; during the year various improvements have been effected, including 15 re-drained or repaired. Nine privy middens were converted to the water-carriage system. The Inspector (Mr. Green) reports on 170 nuisances dealt with.

Whitefield.—(Area in acres, 1,406 ; Estimated Population, 6,686). — *Medical Officer of Health*, A. J. YOUNG, L.R.C.P.E. ; *Salary*, £20 (no claim).

Per 1,000 of Population.	1902.	1901.	Mean of 9 years 1892-1893, 1895-1901.	
Birth-rate.....	27·0 ...	23·3 ...	28·2	
Death-rate	12·4 ...	19·4 ...	18·3	
Zymotic death-rate.....	0·59 ...	4·55 ...	2·85	
Phthisis ,,	0·44 ...	1·06 ...	0·76	
Respiratory ,,	1·49 ...	3·18 ...	3·26	
Rate of deaths under 1 year to 1,000 births.....	71 ...	220 ...	169	

The statistics presented by Dr. Young are marked by an increase in the birth-rate as compared with last year of 3·7 per 1,000, and a decrease in the death-rate equal to 7·0. The zymotic and infant rates also show very large reductions. Measles and whooping cough did not cause a single death, and only 1 was ascribed to diarrhœa. Last year these diseases caused 6, 2, and 9 deaths respectively. One case of small-pox was notified, and prompt removal to the Birtle hospital, belonging to the Bury Corporation, took place. Scarlet fever gave rise to 7 cases 1 death, typhoid fever 4 cases, diphtheria 9 cases 2 deaths, and erysipelas 6 cases.

Hospital Accommodation.—The joint hospital scheme (Radcliffe, &c.) has made little progress.

Disinfection. — No proper appliances. Houses are fumigated either with sulphur or formaldehyd gas.

Sewerage, Scavenging, &c.—Sewage undergoes treatment by precipitation and land filtration. The Mersey and Irwell Joint Committee on three occasions complained of the unsatisfactory condition of the effluent. The Authority carry out scavenging in a satisfactory manner, but many of the streets are unpaved and in a bad condition.

Sanitary Inspection.—Bakehouses and slaughter-houses appear to be in good condition. No attention is given to dairies, cowsheds, and milkshops, and factories and workshops are not inspected. Thirty-four notices were required for the abatement of 27 nuisances. Twelve smoke observations were taken.

Whitworth.—(Area in acres, 4,485; Estimated Population, 9,649.)—*Medical Officer of Health*, ALEXANDER WELSH, M.D.; *Salary*, £40.

Per 1,000 of Population.	1902.	1901.	Mean of 10 years, 1892-1901.
Birth-rate.....	22·5 ...	20·8 ...	22·5
Death-rate	15·2 ...	17·2 ...	17·2
Zymotic death-rate.....	0·41 ...	0·41 ...	1·23
Phthisis ,,	1·45 ...	1·77 ...	1·34
Respiratory ,,	3·00 ...	3·96 ...	4·16
Rate of deaths under 1 year to 1,000 births	100 ...	150 ...	159

The birth-rate shows an increase of 1·7 per 1,000 as compared with last year, but corresponds exactly with the rate for the preceding decennial period. The death-rate is the lowest recorded during the past 10 years with the exception of 1894. The zymotic and infant rates are also well below the average of previous years. Very little infectious sickness came to the knowledge of the sanitary officials. Measles was slightly prevalent in Healey Ward in the first quarter, but only 1 death resulted. Diarrhœa caused 2 deaths and typhoid fever 1 death. Eighteen notifications were received, viz., scarlet fever 4, typhoid fever 4, diphtheria 1, and erysipelas 9.

Hospital Accommodation.—A cottage hospital is kept in readiness for small-pox. During the year the accommodation was increased from 5 beds to 7.

Disinfection.—No apparatus, sulphur and formaldehyde fumigation being relied on.

Water Supply, obtained from Rochdale, is of good quality, but occasionally complaints are made as to its turbidity.

Sewerage, Scavenging, &c.—The scheme for the extension of the outfall works, at a cost of £1,250, has almost been completed. The effluent continues of a satisfactory character. A flushing chamber was constructed at Toundcliffe at a cost of £120, and a similar one is recommended by the Surveyor to be provided at Leavengreave. Scavenging is efficiently performed under the supervision of the Inspector.

Sanitary Inspection.—The slaughter-houses have recently undergone a special examination, and details of the premises and their condition are reported upon. Bakehouses and lodging-houses appear to be well kept, and factories and workshops are, on the whole, well ventilated and lighted and of sufficient air space. Dairies and cowsheds—not subject to regulations—are described “some moderate, some good.” Nuisances abated numbered 45. In the early portion of the year the Council decided to allow the Inspector to devote his whole time to sanitary matters, the office having hitherto been combined with that of Surveyor, &c.

Widnes (Borough). — (Area in acres, 3,110 ; Estimated Population, 29,489.) — *Medical Officer of Health*, D. U. MACLENNAN, M.D. ; *Salary*, £200.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate.....	34·0	...	33·0	...	34·3
Death-rate	15·3	...	18·0	...	19·0
Zymotic death-rate... ..	1·42	...	1·78	...	2·58
Phthisis ,, 	0·50	...	0·41	...	0·73
Respiratory ,, 	3·69	...	5·53	...	4·67
Rate of deaths under 1 year to 1,000 births.....	135	...	189	...	187

The statistics presented by Dr. MacLennan compare

favourably with previous years. The birth-rate is the highest since 1895, the death-rate the lowest since 1896, and the infantile mortality is less than in any of the ten preceding years. There was a gratifying reduction in the number of deaths from whooping cough, only 2 being recorded, against 18 last year and 20 in 1900. Measles gave rise to 10 deaths, as compared with 3 and 41 in the two preceding years. It was deemed advisable at one period of the year to adopt school closure on account of the prevalence of this disease. Diarrhoea contributed 2 deaths, the same number as last year, but 18 less than in 1900. Small-pox gave rise to 1 case, which was immediately removed to the small-pox hospital at Barrow's Green; all precautionary measures were adopted and no further trouble was experienced from this disease. Scarlet fever was the cause of 75 attacks (2 fatal), the numbers for the three preceding years being 35, 158, and 211. Sixty-six per cent. of the scarlet fever cases received hospital isolation. Typhoid fever accounted for 46 cases 15 deaths, against 110 cases 17 deaths last year, and 40 cases 5 deaths in 1900; 82 per cent. of the attacks were treated in hospital. At the request of the Local Government Board, the Medical Officer of Health, at the beginning of 1903, prepared a special report on the prevalence of this disease in the Borough, from which it is observed that the largest number of cases occurred during the second half of the year, due, no doubt, largely to the climatic influences of the season, the virulence of the bacillus typhosus varying according to the moisture, temperature, and period of the year. The deaths occurred at the following ages:—between 5 years and under 15 years, 4; 15-25 years, 4; and 25-65 years, 7. In Simms Cross Ward the cases were most numerous, viz., 16, the remainder of the cases being distributed evenly over the Borough. A large number of the cases came from houses with open privies in their immediate proximity, and in many instances back passages and streets unpaved and unsatisfactorily sewered; it may be pointed out that there are 2,500 open

privies and 1,107 water closets in the Borough. No case of typhoid fever could be traced to the milk supply, and the water is above suspicion. Diphtheria and membranous croup were responsible for 35 cases 11 deaths, and erysipelas 13 cases.

Hospital Accommodation.—The hospital for ordinary infectious diseases consists of 36 beds, and a small-pox hospital is also provided. Ninety-seven cases were removed during the year, viz., small-pox 1, scarlet fever 50, typhoid fever 38, and diphtheria 8.

Disinfection.—Steam apparatus available.

Water Supply excellent, obtained from Stocks Well and Netherley.

Sewerage, Scavenging, &c.—Sewage is discharged into the estuary of the River Mersey. Sewers have been regularly flushed. Scavenging is carried out very satisfactorily under the supervision of a special sub-committee.

Sanitary Inspection.—Twenty-four houses, condemned as unfit for habitation, are being repaired and put in good order. The bakehouses (25) are generally satisfactory, except those underground, and slaughter-houses (11) are kept clean. Dairies (4), cowsheds (33), and milkshops (68) have been duly inspected, and when irregularities were pointed out they received attention. Common lodging-houses (4) and houses let in lodgings (29) complied with the requirements. Factories (40) and workshops (49) were inspected with good results. A few complaints have been made about gases escaping from several works; they were reported to the managers, who invariably endeavoured to prevent further escape. The quantity of sulphuretted hydrogen gas escaping is very much less than in former years. On 70 canal boats examined 11 infringements of the Act were discovered; in one instance legal proceedings were instituted. The Inspector (Mr. Lowe)

reports on the work carried out in his department, which included the abatement of 1,336 nuisances, the service of 345 notices, &c. No action was taken regarding the smoke nuisance.

Withington.—(Area in acres, 5,818; Estimated Population (excluding Workhouse), 35,000).—*Medical Officer of Health*, T. C. RAILTON, M.D. (Lond.) ; *Salary*, £500.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate.....	20·9	...	18·8	...	20·7
Death-rate	11·7	...	12·1	...	12·1
Zymotic death-rate.....	1·00	...	1·11	...	1·03
Phthisis ,,	0·77	...	0·76	...	0·89
Respiratory ,,	1·91	...	1·94	...	2·11
Rate of deaths under 1 year to 1,000 births.....	98	...	127	...	116

The decline in the birth-rate, which has steadily taken place since 1897, was arrested during the year under review, the rate showing a rise of 2·1 over last year, and a slight increase over the mean of the 10 years 1892-1901. All the mortality averages compare favourably with the preceding decennial period. The rates of the sub-divisions are given below :—

	Birth-rate.		Death-rate,		Zymotic Rate.		Infantile Mortality.
Withington	18·5	...	12·5	...	0·9	...	103
Didsbury	18·3	...	10·0	...	0·5	...	80
Chorlton-cum-Hardy..	24·7	...	10·9	...	1·2	...	105
Burnage.....	32·8	...	18·7	...	2·6	...	95

A striking feature of the statistics presented by Dr. Railton is the increase in the number of deaths from measles, and the reduction in the diarrhoea deaths as compared with the previous year. The former disease gave rise to 17 deaths against 1 in 1901, and the latter only 3 deaths against 24. There was

a serious outbreak of measles in Chorlton-cum-Hardy in February and March, and it became necessary to adopt school closure. In March there was a small outbreak in Didsbury, and in the two following months an epidemic occurred in the Withington sub-district, also necessitating school closure. Whooping cough gave rise to little trouble, and only 1 death was recorded against 5 in 1901. One case of small-pox occurred, and was promptly removed to the small-pox hospital at Clayton (Manchester). The patient had just returned from a visit to London, and it is thought the disease was contracted there. Scarlet fever was not so prevalent as in 1901, the figures being 109 cases 7 deaths as compared with 245 cases 1 death. The greatest prevalence was attained in the months of March, April, September, and November. The two chief influences at work tending to spread the disease were (1) unrecognised cases, (2) patients discharged from hospital who were, in the opinion of Dr. Railton, very probably capable of imparting scarlet fever to others after their return home. In the first category an instance is given of a boy who was only diagnosed to be suffering from scarlet fever after a month's illness; to this case 6 others were attributable. As regards "return cases," several instances are reported where cases occurred in houses within a short time of the return of patients from hospital. Of the total cases reported 59 per cent. were removed to hospital. Typhoid fever was the cause of 6 cases 1 death, diphtheria and membranous croup 26 cases 6 deaths, erysipelas 10 cases, and puerperal fever 1 case. In one instance circumstances pointed to the infection of diphtheria having been brought home from the hospital, although every care was taken by the hospital authorities to remove any possible source of infection. Twenty-six bacteriological tests were made, in 10 of which the diphtheria bacilli were discovered, and in 3, although no bacilli were found, the clinical features of the cases were sufficiently clear for the diagnosis to be maintained. In 3 typhoid fever cases the blood serum was submitted to the bacteriological test, with the result that in

two a complete reaction was obtained, and in the third the reaction was incomplete. In 13 doubtful cases the test was applied with negative results. The Council have issued handbills and circulars giving "Precautions to be taken against summer diarrhoea in young children," and also have sent to every practitioner in the district copies of a circular, "Hints for nursing a case of phthisis," with a request that one should be left at houses where phthisical patients live.

Hospital Accommodation.—Prior to December 10th cases were removed to Monsall hospital belonging to the Manchester Corporation, but after that date the new joint hospital at Baguley was available. Seventy-four cases were removed, viz., small-pox 1 (to Clayton), scarlet fever 65, typhoid fever 3, and diphtheria 5. The hospital at Baguley (Cheshire) erected by a Joint Board representing Withington, Moss Side, Levenshulme, and the Bucklow Joint Hospital Board's districts is intended to serve a population of 130,000. The site enclosed for hospital purposes embraces 12 acres of a total available area of 38 acres 1 rood and 33 perches, purchased by the Withington Council at a cost of £5,500. The hospital buildings are comprised in five separate blocks, and accommodation is provided for 56 scarlet fever patients, 36 patients suffering from diphtheria or enteric fever, and 8 isolation beds, a total of 100; 35 of the beds are reserved for the use of the urban district of Withington. There is also an administrative block, with accommodation for the Resident Medical Staff, Matron Superintendent, 25 nurses, and 3 domestic servants, and in the kitchen block provision is made for 19 domestic and 3 male servants, in addition to a dispensary and store rooms. The total expenditure so far has amounted to £65,000; the cost per bed is much above the usual amount, but the character of accommodation provided approaches more closely to the ideal than any hospital in this County. For the treatment of small-pox patients a site 26 acres in extent at Higher Baguley, one mile distant from the hospital, has also

been acquired, and it is intended to proceed at once with the erection of further accommodation.

Disinfection.—The steam apparatus belonging to the City of Manchester was used for the disinfection of 4,164 articles from this district. There were 173 houses fumigated, including 24 after the occurrence of phthisis.

Water Supply is obtained chiefly from the Manchester Corporation. Some of the outlying houses have to rely on shallow wells, but these are gradually being closed and town's water substituted.

Sewerage, Scavenging, &c.—The new main sewers and outfall works, which were commenced in the summer of 1901, are approaching completion. The drains of 13 premises were thoroughly tested with smoke, and the defects discovered remedied. Scavenging is efficiently performed by the Council's employees. A refuse destructor is in operation.

Sanitary Inspection.—Bakehouses are satisfactory except 8 in cellars; these will be closed at the end of 1903 as the Council, after careful consideration, has found it impossible to certify that any one of them complies with the requirements of the Act. Dairies and cowsheds are steadily improving, but a difficulty is often experienced in getting the cowkeepers to fully utilise the means of ventilation at their disposal. Slaughter-houses are described as satisfactory. An Inspector of Workshops who was appointed under the Factory and Workshop Act in July, has visited and registered 300 premises. Attention was directed in every case to the cleanliness and ventilation of all workshops and workplaces inspected. During the year 41 privies have been replaced under notice by water closet and 18 without notice. Notices served for the abatement of nuisances amounted to 186. Six smoke observations were taken.

Withnell.—(Area in acres, 3,705 ; Population, Census 1901, 3,349.)—*Medical Officer of Health*, JOHN SINCLAIR M.B. ; *Salary*, £20.

Per 1,000 of Population.	1902.	1901.	Mean of 9 years, 1893-1901.
Birth-rate.....	23·2 ...	24·1 ...	25·5
Death-rate	7·7 ...	17·9 ...	13·9
Zymotic death-rate.....	0·29 ...	nil. ...	1·12
Phthisis ,,	1·19 ...	1·19 ...	0·91
Respiratory	0·59 ...	2·68 ...	2·49
Rate of deaths under 1 year to 1,000 births.....	76 ...	123 ...	132

The mortality statistics presented by Dr. Sinclair are marked by a reduction in the general death-rate of 10·2 per 1,000 of the population as compared with last year. The rate is the lowest recorded since the district was formed. The zymotic and infant rates are very satisfactory, the former being wholly due to one death from measles. Scarlet fever, introduced from a neighbouring district, was somewhat prevalent in the winter months, altogether 22 cases came under notice. Typhoid fever was entirely absent ; diphtheria, associated with membranous croup, contributed 3 cases, erysipelas 9, and puerperal fever 1 case.

Hospital Accommodation.—A hospital provided with 10 beds will shortly be available. The pavilion will contain two large wards, each capable of accommodating 4 beds, and two small single-bed wards for special cases.

Disinfection.—“ Movable ” apparatus is provided.

Water Supply good, obtained from Liverpool Corporation.

Sewerage, Scavenging, &c.—The effluent from the sewage works has given entire satisfaction. The Authority carry out scavenging]

Sanitary Inspection.—There are no bakehouses; slaughterhouses, factories, and workshops comply with sanitary requirements, and dairies and cowsheds at the present time are undergoing alterations. Twenty-six notices and 30 letters were required for the abatement of 25 nuisances. Three smoke observations were taken.

Worsley.—(Area in acres, 5,412; Estimated Population, 12,604).—*Medical Officer of Health*, R. SAYERS, M.D.; *Salary*, £40 (no claim).

Per 1,000 of Population.	1902.		1901.		Mean of 7 years, 1895-1901.
Birth-rate.....	24·9	...	22·3	...	23·9
Death-rate	14·9	...	15·6	...	14·2
Zymotic death-rate.....	1·34	...	1·92	...	1·85
Phthisis ,, 	1·11	...	0·80	...	0·89
Respiratory ,, 	1·58	...	2·08	...	2·48
Rate of deaths under 1 year to 1,000 births.....	111	...	154	...	150

An increase in the birth-rate of 2·6 per 1,000 is accompanied by a decrease in the death-rate equal to 0·7, as compared with 1901. The zymotic rate is below the average, and the infantile mortality is the lowest recorded during the last 10 years. Measles became epidemic in Boothstown during May and June, the schools there being closed for a period of six weeks. The disease gradually spread to Walkden, but not to the same extent as in Boothstown; fortunately only 4 deaths resulted. Diarrhœa contributed 3 deaths, against 13 in 1901. One case of small-pox was notified, the infection being brought from Westhoughton, where the patient had visited a friend, who afterwards proved to be suffering from the disease. The case was at once removed to the Salford hospital. The notifications altogether amounted to 121, an increase of 16 on the previous year. The cases of diphtheria and membranous croup—32 with 4 deaths, showed an increase as compared with 22

and 3 deaths; scarlet fever contributed 60 cases 3 deaths, against 49 cases deaths nil; typhoid fever 17 cases 3 deaths, against 13 cases 3 deaths; and 11 cases of erysipelas were notified, as compared with 19 in the previous year.

Hospital Accommodation.—Six beds are reserved for the use of this district at the Ladywell sanatorium (Salford), and during the year the Council decided to erect a temporary hospital for small-pox. Fourteen cases received hospital isolation, viz., small-pox 1, and scarlet fever 13.

Disinfection.—Steam apparatus at the sanatorium (Salford) is said to be available.

Water Supply described as good.

Sewerage, Scavenging, &c.—The Mersey and Irwell Joint Committee have at times complained of the unsatisfactory character of the effluents from the Barton Old Hall and the Boothstown sewage works. With regard to the former works the Council have decided to adopt the septic treatment in lieu of the present method of dealing with the sewage by chemical precipitation, and also to provide additional tanks. Improvements are also contemplated at the Boothstown outfall works. Scavenging is performed by contract. The emptying of ashpits on unpaved porous ground allows the liquid excremental matter to be absorbed and become a danger to health.

Sanitary Inspection.—Bakehouses are described as good, and slaughter-houses, excepting a few minor defects, give satisfaction. One cowshed was condemned as unfit for its purpose, but, on the whole, these premises are in fair condition. The majority of the factories and workshops comply with the requirements as regards ventilation, air space, &c. Seventy-six canal boats were examined, 16 infringements of the Act being discovered. The Inspector (Mr. Willcock) reports on the work carried out in his department; 105 notices were served, 191 nuisances abated, 22 smoke observations, &c.

RURAL SANITARY DISTRICTS.

Barton-upon-Irwell.—(Area in acres, 6,872; Estimated Population, 8,244).—*Medical Officer of Health*, ALBERT E. BERRY, M.D. (LOND.); *Salary*, £60.

Per 1,000 of Population.	1902.	1901.	Mean of 10 years, 1892-1901.
Birth-rate.....	25·8 ...	23·8 ...	25·8
Death-rate	16·7 ...	13·8 ...	13·5
Zymotic death-rate.....	2·54 ...	1·98 ...	1·69
Phthisis ,,	0·84 ...	1·11 ...	0·84
Respiratory ,,	2·66 ...	1·85 ...	2·57
Rate of deaths under 1 year to 1,000 births.....	117 ...	98 ...	126

The birth-rate for the year under review coincides with the average of the 10 years 1892-1901, but the death-rate shows an increase of 3·2 per 1,000 of the population, and is the highest recorded during that period. The zymotic rate is also higher than in any year since 1892. The townships of Flixton and Clifton each had a death-rate of 17 per 1,000, while Davyhulme and Barton Moss had a rate of 12 per 1,000. Two deaths, both in Davyhulme, resulted from measles; at the beginning of February it was found necessary to close one of the schools in the township mentioned for a period of three weeks. Whooping cough contributed 3 deaths and diarrhoea 2 deaths. There was an increase in the notifications as compared with previous years, viz., 147, against 115 in 1901, 63 in 1900, and 96 in 1899. Diphtheria—associated with membranous croup—was unusually prevalent in parts of the district, 80 cases being reported—47 in Clifton, 31 in Flixton, and 2 in Davyhulme; 10 deaths resulted. In December the National School at Flixton was closed for a month owing to the prevalence of this disease. Scarlet fever was the cause of 49 cases 3 deaths,

typhoid fever 5 cases, typhus fever 1 case (fatal), erysipelas 11 cases, and puerperal fever 1 case. The typhus fever case was a very doubtful one, the patient after three weeks in hospital going to a non-infectious convalescent home at the seaside; from there he was sent home in a dying condition, and the death certificate was given as typhus fever by the same medical practitioner who notified the case in the first instance.

Hospital Accommodation.—An arrangement exists with the Salford Corporation to take cases from this district into the Ladywell sanatorium. During the year 51 cases were removed, viz., scarlet fever 25, diphtheria 24, typhoid fever 1, and typhus fever 1.

Disinfection.—Steam apparatus at the hospital is available. Houses fumigated with sulphur or formaldehyde gas numbered 116.

Water Supply.—Excepting a few scattered houses, the whole district is now supplied with water either from Manchester or Bolton.

Sewerage, Scavenging, &c.—Sewage is treated on two farms—Clifton and Davyhulme. On four occasions the Mersey and Irwell Joint Committee complained of the character of the effluent from the latter works. The usual flushing of sewers has been continued with good results, and better means of ventilation have been adopted. The emptying of ashpits and disposal of house refuse at Clifton is carried out in a satisfactory manner by a contractor. The system hitherto in force at Flixton has been altered, the Council themselves now undertaking this work. At Barton Moss and Davyhulme the occupiers are still liable for ashpit emptying, and it is stated very little difficulty is experienced.

Sanitary Inspection.—Bakehouses—two of which are in cellars—are fairly well conducted, and slaughterhouses are, on

the whole, in good condition. Some of the old cowsheds do not conform to requirements as to air space, ventilation, and lighting. Twenty-two premises were inspected under the Factory and Workshop Act, and little exception could be taken to their sanitary condition. Five houses were provided with water-closets in lieu of privy middens. The Inspector (Mr. Bland) served 52 notices, and as a result secured the abatement of 58 nuisances. He took 7 smoke observations; in one instance legal proceedings followed, and a fine of 20s. and costs was inflicted.

Blackburn.—(Area in acres, 20,150; Population, Census 1901, 8,238.)—*Medical Officer of Health*, W. R. POLLARD, L.R.C.P.E.; *Salary*, £40.

Per 1,000 of Population.	1902.	1901.	Mean of 10 years 1892-1901.
Birth-rate.....	24·8 ...	22·0 ...	28·1
Death-rate	13·1 ...	18·8 ...	16·8
Zymotic death-rate.....	0·84 ...	1·72 ...	1·41
Phthisis ,,	0·60 ...	0·61 ...	0·79
Respiratory ,,	2·79 ...	3·66 ...	3·10
Rate of deaths under 1 year to 1,000 births.....	117 ...	165 ...	149

The statistics presented by Dr. Pollard are marked by reductions of 3·3 and 3·7 per 1,000 in the birth and death rates respectively as compared with the averages of the preceding decennial period. The general death-rate is lower than any recorded in the 10 years, the zymotic rate is the lowest since 1895, and the infantile mortality has not been so favourable since 1896. The birth-rate varied from 43·9 in Osbaldeston, 30·3 in Eccleshill, 27·9 in Ramsgreave, 27·02 in Livesey, to 15·3 in Balderstone, and nil in Dinckley; and the death-rate from 40·5 in Dinckley, 36·8 in Osbaldeston, 23·2 in Witton, to 9·6 in Clayton-le-Dale, 9·0 in Mellor, and 6·7 in Wilpshire. Measles was somewhat prevalent in Tockholes in May, and

in Pleasington in September, and at Mellor there were a considerable number of cases of whooping cough in October. The former disease gave rise to 3 deaths, and the latter 1 death. Diarrhœa also caused 1 death. A case of small-pox occurred at Livesey, but the origin could not be discovered. Scarlet fever was responsible for 13 cases, typhoid fever 9 cases 2 deaths, diphtheria 9 cases, and erysipelas 2 cases.

Hospital Accommodation.—One case of typhoid fever was removed to the Blackburn isolation hospital from Livesey, and the case of small-pox was isolated in the Finnington hospital.

Disinfection.—In some instances infected bedding, &c., was stoved at Blackburn. Houses are fumigated with sulphur.

Water Supply.—During the year the Medical Officer of Health examined the water supplies of the various townships. In Mellor water mains are now being laid, and there has been an extension of the water supply in Billington from the mains of the Blackburn Corporation, and now, not only Langho, but also the houses lying between that village and the boundary of the township of Whalley are supplied.

Sewerage, Scavenging, &c.—Four outfall works are in operation, viz., Mellor Brook, Wilpshire, Pleasington, and Eccleshill. The nuisance caused by the River Darwen at the weir at Feniscowles still exists, and constitutes a condition injurious to health. Scavenging is not satisfactorily performed, the work being left to owners and occupiers.

Sanitary Inspection.—There are no bakehouses or public slaughter-houses; cattle are generally killed at the farmsteads. Dairies and cowsheds undergo periodical inspection, and their sanitary condition is improving. The premises examined under the Factory and Workshop Act complied with the requirements. The Inspector served 58 notices, 57 of which were complied with.

Burnley.—(Area in acres, 41,097; Estimated Population, 16,600.)—*Medical Officer of Health*, THOMAS DEAN, M.D.; *Salary*, £80.

Per 1,000 of Population.	1902.	1901.	Mean of 10 years, 1892-1901.
Birth-rate.....	23·4 ...	22·4 ...	24·4
Death-rate	12·9 ...	12·7 ...	14·5
Zymotic death-rate.....	2·10 ...	1·08 ...	1·52
Phthisis ,,	0·54 ...	0·72 ...	0·95
Respiratory ,,	2·71 ...	2·17 ...	3·10
Rate of deaths under 1 year to 1,000 births.....	107 ...	131 ...	125

The birth and death rates vary but little from those of 1901, but the zymotic rate is increased 1·02 per 1,000. The infantile mortality shows a gratifying reduction. Read and Simonstone, Pendle, and Briercliffe have the lowest death-rates, and Hapton, Huncoat, and Foulridge the highest. Measles—the cause of 12 deaths—was prevalent throughout the district, and in October schools were closed in Wheatley Lane and Pendle Forest. Whooping cough contributed 2 deaths, and diarrhœa 1 death. Eleven cases of small-pox were reported, 5 occurring amongst persons taken to the hospital premises to be quarantined, 2 were doubtful cases, and the remaining 4 occurred in the township of Briercliffe. A young man working in a weaving factory caught the disease in a neighbouring district, two persons with whom he lived took the infection, and also a fellow worker at the mill. Nine cases were isolated in the hospital, and all other precautions adopted. One death took place in hospital—a child, age 1 day, born in hospital. Scarlet fever had an increased prevalence with 130 cases 7 deaths, against 70 cases 2 deaths in 1901. Foulridge with 32 cases 3 deaths was most affected; the disease here spread from house to house by the visiting of parents and the social habits of children. Worsthorne had 22 cases, Hapton 15, and Huncoat 15. Only a small proportion of the cases were removed to hospital as “parents prefer

to nurse their children themselves." Several cases of scarlet fever occurred in farmhouses, and special attention was given to prevent contamination of the milk. Diphtheria and membranous croup gave rise to 14 cases 8 deaths; in several instances defects in drainage were discovered, and in a few instances the water supply was not satisfactory. Typhoid fever contributed 8 cases 1 death, erysipelas 7 cases, continued fever 3 deaths, and puerperal fever 1 case.

Hospital Accommodation.—The joint hospital was used for the isolation of 27 cases, viz., small-pox 9, scarlet fever 8, typhoid fever 4, and diphtheria 6.

Disinfection.—Steam apparatus at Burnley is used when required.

Water Supply.—The Surveyor reports "the need for water supplies is happily narrowing down to smaller compass, the activity of the Council having effected, in this respect, quite a revolution. Public water supplies are now laid in the townships of Huncoat, Altham, Read, Old Laund Booth, Barley, Blacko, Briercliffe, Worsthorpe, and Foulridge. With the exception of out of the way places, the whole of the inhabitants of the townships named have water laid on to the houses. The township of Hapton has a supply also, but it is private. The water is good, but the want of storage is a grave defect and danger. Other townships, namely, Dunnockshaw, Ightenhill Park, Reedley Hallows, and Simonstone have private or public supplies. In the case of Simonstone improvement is needed. The townships of Goldshaw Booth, Higham, and Roughlee have plenty of wholesome water, but it has to be carried from wells and troughs. The township suffering most in respect to its water supply is Cliviger, but that is about to be remedied."

Sewerage, Scavenging, &c.—The Chief Inspector of the Ribble Watershed Joint Committee reports as follows:—

Huncoat—In July an Inquiry was held by the Local Government Board into an application to borrow £7,000 for works of sewerage and sewage disposal. The scheme provides a tank capacity of about 60,000 gallons, two bacterial filters, and a storm water filter. Briercliffe and Haggate, Cliviger and Holme—Sites have been selected for sewage works, but nothing further done. Blackho and Wheatley Lane—nothing done. Worsthorne—site selected and plans for works completed. Higham—site selected. Altham—additional septic tanks completed. The scavenging of the privies and ash-pits in 5 townships is done by contract, in 4 townships directly by the Council, and arrangements are now being made for the scavenging by the Council of 3 other townships. The townships left to the care of property owners will then be the small scattered districts, including Barley, Dunnockshaw, Goldshaw, Habergham Eaves, Heyhouses, Ightenhill, Northtown, Roughlee, Simonstone, and Wheatley Carr. These are purely agricultural districts, and receive fair attention from the property owners.

Sanitary Inspection.—Two houses have been dealt with under the Housing of the Working Classes Act, 1890, the premises being unfit for human habitation. Bakehouses and slaughter-houses appear to be well conducted. Dairies and cowsheds have received 187 inspections; 12 notices were served requiring improvements in regard to lighting, ventilation, drainage, and the provision of a better water supply. The Council are reminded that they have no regulation fixing a definite amount of air space for cowsheds. Canal boat inspections were carried out as usual at Foulridge, Hapton, and Huncoat, but no serious defects were discovered. Factories and workshops came under observation, resulting in a few instances in improved sanitary accommodation. The Inspectors (Messrs. Edmondson and Hewes) report 651 nuisances dealt with; 597 were abated after the service of 542 notices, and the remainder will be kept under notice until remedied.

Bury.—(Area in acres, 12,014 ; Estimated Population, 8,175).
Medical Officer of Health, J. W. Cook, M.B. ; *Salary*, £95.

Per 1,000 of Population.	1902.	1901.	Mean of 10 years, 1892-1901.	
Birth-rate.....	21·4 ...	18·9 ...	22·6	
Death-rate	12·6 ...	11·8 ...	14·6	
Zymotic death-rate.....	1·10 ...	1·60 ...	1·32	
Phthisis ,,	0·24 ...	0·49 ...	0·62	
Respiratory ,,	2·56 ...	2·34 ...	3·76	
Rate of deaths under 1 year to 1,000 births.....	154 ...	143 ...	123	

The birth-rate, although below the average of previous decade, shows an increase of 2·5 per 1,000 as compared with 1901. The death-rate—excepting last year—is the lowest recorded since 1889, but the infantile mortality is unusually high. The township death-rates were as follows:—Ainsworth 14·9, Birtle-cum-Bamford 14·3, Outwood 14·3, Unsworth 10·6, and Walmersley-cum-Shuttleworth 7·03. Referring to the infantile mortality, Dr. Cook says this rate would probably be materially diminished if the mothers ceased working in the mills earlier in their pregnancies, and did not return to work so soon after the birth of the child. Measles caused only 1 death, diarrhoea 2 deaths, and whooping cough 2 deaths. Of the notifiable diseases diphtheria was the most prominent, 32 cases and 4 deaths being ascribed to this cause. Twenty-seven occurred in the first four months of the year, and these were almost entirely confined to the Unsworth district. The remaining notifications were scarlet fever 11, typhoid fever 1, erysipelas 2, and puerperal fever 1.

Hospital Accommodation.—The joint hospital scheme (Radcliffe, &c.) has made but little progress during the year. An arrangement exists with the Bury Corporation to take any case of small-pox that may arise in this district.

Disinfection.—No apparatus ; 53 rooms were fumigated.

Water Supply is obtained partly from private sources, and partly from the Bury Joint Board, and the Bolton Corporation.

Sewerage, Scavenging, &c.—Sewage is treated at two outfall works—at Unsworth (Hollins) by land filtration, and at Outwood (Prestolee) by septic tank and bacteria filter beds. Scavenging as carried out by arrangement with the farmers, is, as a rule, well performed.

Sanitary Inspection.—The only bakehouse is well conducted, and slaughter-houses are fairly satisfactory. Dairies and cowsheds were found, on the whole, to be in a cleanly state, but many are defective in regard to drainage and ventilation. Of 27 workshops examined several were deficient in general cleanliness, in 2 the sanitary arrangements were unsatisfactory, and 9 required cleansing or limewashing. Of thirty canal boats examined only 1 was found to be not in compliance with the Act. The Inspector (Mr. Hurst) reports on 307 nuisances abated on the issue of 43 legal notices. Twenty smoke observations were taken.

Chorley.—(Area in acres, 39,988 ; Estimated Population, 19,700).—*Medical Officer of Health*, J. A. HARRIS, M.D. (Lond.) ; *Salary*, £150.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate.....	30·6	...	28·0	...	30·0
Death-rate	15·6	...	13·1	...	15·8
Zymotic death-rate.....	1·42	...	1·24	...	1·12
Phthisis ,,	0·71	...	0·72	...	0·83
Respiratory ,,	3·14	...	2·38	...	2·99
Rate of deaths under 1 year to 1,000 births.....	145	...	101	...	130

The birth-rate is fractionally higher than the mean of the 10 years 1892-1901, while the death-rate shows a slight

reduction. The zymotic and infant rates exceed the average. The death-rates of the sub-districts were as follow :—Chorley 16·3, Brindle 14·1, Croston 15·5, Leyland 15·5, and Rivington 16·8. Measles was very prevalent during the early months of the year, and schools were closed at Coppull, Euxton, Whittle-le-Woods, Wheelton, Heskin, Mawdsley, and Eccleston. Whooping cough occasioned much trouble in some townships, and at Rivington school closure was adopted. The former disease caused 8 deaths, and the latter 4. Diarrhœa gave rise to 4 deaths. The number of notifications of infectious disease (261) was far in excess of any previous year. No less than 116 came from Coppull; Heskin and Whittle had 21 each, Anderton and Heath Charnock 18 each, Clayton-le-Woods 13, and the rest of the townships, with the exception of Anglezarke (nil), numbers varying from 8 to 1. Scarlet fever with 175 cases 7 deaths was unusually prevalent. The months of March and May, and from September to the end of the year yielded the greatest number of cases, 100 being reported during the last four months. Eighty-three cases occurred at Coppull, where it was necessary to close the schools. Heskin had 20 cases, Anderton 14 cases, and Heath Charnock 11 cases. Diphtheria gave rise to 24 cases 3 deaths against 48 cases 9 deaths in the previous year; there was an epidemic of this disease in the neighbouring district of Adlington, and the majority of cases in this district were due directly or indirectly to the same source of infection. At Anderton the school was closed for a short period on account of this disease. Typhoid fever contributed 27 cases 2 deaths, erysipelas 31 cases, puerperal fever 3 cases, and intermittent fever 1 case.

Hospital Accommodation.—Forty cases were removed to the joint hospital at Heath Charnock, viz., scarlet fever 39 and typhoid fever 1. An arrangement has been made by the Joint Hospital Board with the Blackburn Corporation to take into their hospital at Finnington any small-pox cases that may arise in the Joint Board's districts.

Disinfection.—No apparatus. The Chorley Corporation apparatus would be used in case of small-pox. Seventy-nine houses were limewashed and disinfected after the occurrence of infectious disease.

Water Supply.—Coppull is supplied from the Liverpool Corporation mains; Anderton, Heath Charnock, Whittle-le-Woods, Clayton-le-Woods, Heapey, and Wheelton from the Thirlmere pipe belonging to the Manchester Corporation. The question of supplying the townships of Euxton, Eccleston, Bretherton, Mawdesley, Ulnes Walton, Heskin, Welch Whittle, and Charnock Richard—none of which at present have a good supply—with water from the Thirlmere aqueduct has again been under consideration, but financial difficulties are in the way.

Sewerage, Scavenging, &c.—The Chief Inspector of the Ribble Joint Committee reported that the sewage works at Coppull are too small to deal with the volume of sewage, and in consequence the works are to be extended. A Local Government Board Inquiry was held as to a scheme for Heath Charnock and Rawlinson Bridge. An application was also made for a loan to enable the two new settling tanks at Eccleston to be placed at a higher level, so as to bring the whole of the irrigation land into use. Scavenging is not satisfactorily performed, the householders being responsible for this work. Dr. Harris advises the Council to appoint scavengers for the most populous townships or groups of townships, to act directly under the control of the Authority.

Sanitary Inspection.—Bakehouses are described as “good” and slaughter-houses as “moderate.” Visits are only made “occasionally” to the dairies and cowsheds, which are not subject to regulations; it is a matter for regret that so little attention is given to this important work. One hundred and thirty-two notices were served requiring the abatement of nuisances, and all were complied with.

Clitheroe (Lancashire portion).—(Area in acres, 33,459 ; Population, Census 1901, 6,726.)—*Medical Officer of Health*, W. P. COUNSELLOR, M.D. ; *Salary*, £50.

Per 1,000 of Population.	1902.	1901.	Mean of 10 years, 1892-1901.
Birth-rate.....	17·2 ...	23·3 ...	22·9
Death-rate	12·9 ...	16·2 ...	15·6
Zymotic death-rate.....	0·89 ...	1·33 ...	1·03
Phthisis ,,	1·04 ...	0·74 ...	0·88
Respiratory ,,	2·52 ...	2·23 ...	2·95
Rate of deaths under 1 year to 1,000 births.....	69 ...	108 ...	108

The statistics presented by Dr. Counsellor are marked by decreases in the birth and death rates equal to 6·1 and 3·3 per 1,000 respectively as compared with last year. The birth-rate is lower than in any year during the preceding decade, and the death-rate is the lowest recorded, excepting 1898, when it was exactly the same. The zymotic and infant rates are satisfactory, the latter being less than in any year on record. Not a single death was due to measles, whooping cough, or diarrhoea. The first-named disease was somewhat prevalent at Hurst Green in October, and the school was closed for a period of three weeks. Scarlet fever gave rise to 12 cases 2 deaths, typhoid fever 3 cases, diphtheria 5 cases 4 deaths, and erysipelas 1 case.

Hospital Accommodation.—Nil. A conjoint scheme for the provision of a small-pox hospital for the districts within the Union has been agreed upon. The position at the end of the year was that the Authorities decided forthwith to procure a temporary hospital and ambulance waggon, and to select a site that would serve for the whole area.

Disinfection.—No apparatus.

Water Supply.—Extension of the mains has taken place at Pendleton, Sabden, and Hurst Green, and notices have been

served requiring a better supply to houses at Leagram and Little Bowland. As reported last year, there is great need of water for many cottages and farms round Chipping.

Sewerage, Scavenging, &c.—The sewerage of the Nether-town district of Whalley has been completed; a new sewage tank has been constructed at Lamb Roe; and new drains have been laid at Whalley Abbey, Wiswell, and Chatburn. The outfall works at Whalley, Barrow, and Chatburn have given good results, but the works at Sabden are not altogether conducted to the satisfaction of the Ribble Joint Committee. Scavenging in Chatburn is undertaken by contract, but in the remaining townships the householders are responsible. The work is better performed than formerly, but there is still much room for improvement.

Sanitary Inspection—Slaughter-houses—13 in number—are classed as very good, and dairies and cowsheds (29) are reported as clean, well lime-washed, and in the majority of cases properly supplied with water. The thirty premises inspected under the Factory and Workshop Act, on the whole, complied with the requirements. The Inspector secured the abatement of 40 nuisances as the result of 47 notices.

Fylde.—(Area in acres, 40,114; Estimated Population, 11,350).—*Medical Officer of Health*, C. COURT, M.B.; *Salary*, £50.

Per 1,000 of Population.	1902.	1901.	Mean of 10 years, 1892-1901.	
Birth-rate.....	28·3 ...	25·8 ...	28·0	
Death-rate	13·9 ...	14·8 ...	16·0	
Zymotic death-rate.....	1·58 ...	1·33 ...	1·43	
Phthisis ,,	1·05 ...	0·89 ...	1·08	
Respiratory ,,	1·23 ...	1·42 ...	2·37	
Rate of deaths under 1 year to 1,000 births.....	74 ...	113 ...	123	

The birth-rate is the highest recorded during the last six

years, while the death-rate is the lowest since 1894. The zymotic rate is fractionally above the mean of the 10 years 1892-1901, but it is pleasing to note that the rate of deaths under one year to 1,000 births is the lowest recorded. Measles—the cause of 7 deaths—was somewhat prevalent during the first half of the year, and necessitated school closure. No deaths were ascribed to whooping cough or diarrhœa. The total number of cases notified was 103, a considerable increase on the preceding year. Scarlet fever gave rise to 76 cases and 5 deaths, against 44 cases 4 deaths in 1901. Forty-nine of the scarlet fever notifications came from Wesham, where it is stated the prevalence of the disease was undoubtedly increased by the cases not being notified at the beginning of the epidemic, as owing to the mildness of the type, no medical attention was drawn thereto. Typhoid fever was responsible for 19 attacks and 4 deaths; 6 cases at Carleton, all at one farm, were due to defective drainage and impure water supply; at Wrea Green 2 were caused by defective drainage; 5 at Marton and 1 at Freckleton were also attributed to similar insanitary conditions. Only 4 cases of diphtheria were notified, but 2 had a fatal termination; one case at Marton was due to defects in drainage, and one was attributed to a questionable milk supply. The remaining notifications were—erysipelas 3 and puerperal fever 1.

Hospital Accommodation.—Eighteen cases were removed to the new joint hospital at Moss Side, viz., scarlet fever 9, and typhoid fever 9. Provision is now made for small-pox cases at Elswick.

Disinfection.—No apparatus. Houses fumigated numbered 66.

Water Supply.—The greater part of the district is supplied by the Fylde Water Board. Extensions of the mains have taken place, a pipe having been laid to Elswick, and a large

number of property owners have had service pipes put into their houses.

Sewerage, Scavenging, &c.—The work in connection with the Bispham and Carleton sewerage scheme is now in hand, and at Wrea Green the Parish Council are formulating a scheme which will be laid before the Rural District Council at an early date. The smoke test was applied to the drains of 17 houses. Scavenging is undertaken by contract in Wesham, but in the other townships this work devolves on the householders.

Sanitary Inspection.—Four houses were condemned as unfit for human habitation; one was closed and the other 3 have been made habitable. No complaints were made respecting bakehouses, and slaughter-houses, on the whole, have been well kept. Improvements at the dairies and cow-sheds are noted, several farms having had the drains relaid. The Inspector (Mr. Jolly) secured the abatement of 111 nuisances, after the service of 79 preliminary and 13 legal notices.

Garstang.—(Area in acres, 57,380; Population, Census 1901, 10,437).—*Medical Officer of Health*, THOMAS FISHER, M.R.C.S.; *Salary*, £70.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate.....	24·0	...	23·7	...	23·0
Death-rate	13·3	...	11·6	...	13·6
Zymotic death-rate.....	0·38	...	0·37	...	0·77
Phthisis ,,	0·67	...	0·57	...	0·69
Respiratory ,,	1·53	...	1·82	...	2·62
Rate of deaths under 1 year to 1,000 births.....	67	...	72	...	96

The statistics presented by Dr. Fisher vary but little from those of the previous year, excepting the general death-rate,

which shows an increase of 1·7 per 1,000 of the population. The zymotic and infant rates are very satisfactory. The highest death-rates were recorded in the townships of Barnacre, Nateby, Out Rawcliffe, and Hambleton. Very little infectious sickness occurred during the year. Not a single death was ascribed to measles, whooping cough, or diarrhoea, and only 34 notifications were received. Scarlet fever contributed 15 cases 1 death; the majority of the attacks took place in Bilsborrow and Claughton, and the school in the former township was closed for a short time. Six cases of typhoid fever were notified and 1 death resulted; at all the houses attacked insanitary conditions were found. Diphtheria and membranous croup gave rise to 10 cases 2 deaths; 4 of the cases occurred at one house in Out Rawcliffe, where the drainage was defective, the water risky in character, and the dwelling situated at a low level on a damp peaty sub-soil. Erysipelas caused three cases. The voluntary notification of phthisis is invited, and arrangements have been made for bacteriological examinations in suspected cases of typhoid fever and diphtheria.

Hospital Accommodation.—No provision is made for ordinary infectious diseases, but the newly-erected pavilion at Elswick is available for small-pox.

Disinfection.—No appliances. Dr. Fisher urges the Council to provide portable steam apparatus. Twenty-one houses were fumigated.

Water Supply.—In compliance with a letter from the Local Government Board, in September, the Medical Officer of Health furnished a special report on the water supply of the district, and the following information is taken from that report. Of the 22 townships comprising the district the following 12 may be said generally to have a deficient supply:—

“ Pilling, Winmarleigh, Cabus, Nateby, Upper Rawcliffe (excepting the Village of St. Michaels-on-Wyre and Tarnacre,

supplied by Fylde Water Board), Out Rawcliffe, Hambleton, Stalmine-with-Staynall, Great Eccleston (except Village), Inskip-with-Sowerby, Myerscough, Bilsborrow, Calder Vale (Barnacre).

“ Extensions will shortly be made to supply a portion of Inskip-with-Sowerby, and also a length from Great Eccleston Village to the Vicarage, supplying five dwellings on the way, including the school and school-house. The service pipes are at present on the ground ready to be laid.

“ The water supply for the following eight townships is generally good :— Cleveley, Nether Wyresdale, Garstang, Kirkland, Barnacre-with-Bonds (except Calder Vale), Catterall, Bleasdale, Claughton.

“ Holleth and Forton may be classed as moderate.

“ The great difficulty of dealing with the water supply of the Garstang Rural District is the scattered nature of the population, the district being for the most part agricultural.

“ As to the importance and necessity of a good wholesome water supply being wanted for the townships named there cannot be any doubt.

“ There are good wells in the district, but these generally are the exception.

“ There are three common sources of contamination of wells :—

- 1.—The alluvial or contaminated character of the subsoil.
- 2.—Middensteads or leaky drains.
- 3.—Inefficient coverings to wells.

“ The districts generally requiring water are flat, and the wells, unless most carefully made, are apt to drain the surrounding land. By far the larger number of farms have to depend upon ponds or ditches for their supply of water for cattle, the well water being retained for domestic purposes.

In conclusion Dr. Fisher sees nothing for it but to extend the Fylde water mains, and also those of the Preston Rural

Council where possible. The whole matter is one of expense, as from either source the water is good and wholesome.”

Sewerage, Scavenging, &c.—“The sewage works on the north side of Bowgreave, in the township of Barnacre-with-Bonds, continue to give satisfaction. The septic tank and automatic sprinklers at the works on the south side of Bowgreave are now working well after giving much trouble. A new sewer has been laid in Church Street, Garstang, and the work of laying a new sewer in Bryning’s and Croston Weinds, in Garstang, is in hand. A length of sewer at Calder Vale was taken up and relaid, and is now satisfactory. Plans and particulars have been prepared for a new main sewer in Bonds Lane, in the township of Barnacre-with-Bonds.” Scavenging of Garstang is carried out in a satisfactory manner by contract, and the Council’s employees do the work in Calder Vale; the rest of the district is left to the owners or tenants. The Medical Officer of Health advises the Council to undertake the scavenging of the most congested places in the district, such as Bonds and Bowgreave, in the township of Barnacre-with-Bonds, Great Ecclestone Village, Stalmine Village, Hambleton Village, Pilling Village, and Churchtown Village, in the township of Kirkland.

Sanitary Inspection.—Two houses were dealt with under the Housing of the Working Classes Act, and 3 others are under consideration. Bakehouses, lodging-houses, slaughter-houses, and workshops are all regularly inspected, and on the whole are well kept. The slaughter-house bye-laws only apply to five of the 22 townships; it would be beneficial if they were made applicable to the whole district. Dairies and cowsheds are described as “variable.” As farming is one of the chief occupations of the district, it is to be regretted that the Council have not yet adopted dairy and cowshed regulations. The question was brought before them in 1896, and it was then considered “wise not to adopt the Order.” The Inspector (Mr. Cook) reports on 118 nuisances abated.

Lancaster.—(Area in acres, 54,503; Population, Census 1901, 8,837.)—*Medical Officer of Health*, G. R. PARKER, L.R.C.P. (Lond.); *Salary*, £50.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years 1892-1901.
Birth-rate.....	26·2	...	21·3	...	27·7
Death-rate	16·7	...	14·1	...	15·0
Zymotic death-rate.....	1·13	...	1·47	...	1·43
Phthisis ,,	0·79	...	0·79	...	1·14
Respiratory ,,	2·48	...	1·69	...	2·38
Rate of deaths under 1 year to 1,000 births.....	125	...	116	...	123

As compared with the previous year, the birth and death rates show increases of 4·9 and 2·6 per 1,000 of the population respectively. The zymotic rate is reduced 0·34, but the infantile mortality is slightly less favourable. The death-rates obtained in the sub-districts were as follows:—Lancaster, 7·76; Heaton, 15·03; Warton, 15·28; and Ellet, 20·09. Measles—not now notifiable—and diarrhoea caused little trouble, and did not contribute a single death. Whooping cough gave rise to 5 deaths; the schools at Galgate were closed for some time by the managers on account of the prevalence of this disease. Forty-six notifications were received, against 25 last year. Of these, scarlet fever was responsible for 15, typhoid fever 5, and diphtheria 26. Five of the diphtheria cases had a fatal termination.

Hospital Accommodation.—Only two cases were removed to the Lancaster Corporation hospital, viz., scarlet fever 1, and typhoid fever 1.

Disinfection.—The necessity for the provision of portable disinfecting apparatus was referred to last year, but beyond enquiries as to the cost nothing has been done.

Water Supply.—The question of water supply to the townships of Cockerham and Thurnham (including Glasson Dock)

has been under discussion several times during the year. It is hoped that some practical steps will ere long be taken to remove the existing disgraceful conditions, which have formed the subject of several special reports. Silverdale is also badly in need of a good supply, and Dr. Parker suggests that the most economical way out of the difficulty would be for this township to combine with Priest Hutton and the Yealands, and obtain water from the Manchester Corporation Thirlmere pipes. The townships of Slyne, Hest Bank, and Bolton are supplied by the Lancaster Corporation. During the year, Galgate has received a satisfactory supply.

Sewerage, Scavenging, &c.—In consequence of a report by one of the Local Government Board Inspectors, the Council determined to reconstruct the Galgate main sewer, and applied for permission to borrow the necessary money. The reconstruction of the sewerage system of Warton was also decided upon, but, at the Inquiry into the application to borrow money, the plans were rejected; new drawings have been made, and now await the approval of the Local Government Board. Improvements have been effected at Bolton—the Town End tank was abolished, and the sewer connected to the main system. The tank near the school has also been done away with, and this small system no longer discharges into the canal. The main sewer from St. Michael's Well to the sea has not been attended to, nor has the nuisance at the outfall been abated. In the early part of 1902, about half of the Galgate sewer was cleaned out, but the Medical Officer of Health thinks this was merely a waste of money, as what is required is entire reconstruction. No attempt has been made to deal with the nuisances caused by the sewers of Priest Hutton, Overton, and Middleton. Scavenging of the larger villages is performed by contractors in a fairly satisfactory manner.

Sanitary Inspection.—The places specially visited during the year were Galgate, Warton, Bolton, Glasson Dock, Thurnham, Cockerham, the Yealands, and Silverdale. Bakehouses

are described as fair; and the only common lodging-house—situated at Warton—is well conducted. Slaughter-houses are “not satisfactory”; during the year, however, model bye-laws regulating these places have been adopted, and steps ought to be taken to remove the existing insanitary conditions. Again I regret to have to report that the Dairies, Cowsheds, and Milkshops Order is not enforced, and although dairies and cowsheds are described as “not satisfactory,” no attention is given to these places. Eighteen visits were paid to 12 canal boats, which were found in good order. Eighty-four nuisances were abated, only 25 notices being required.

Leigh.—(Area in acres, 11,574; Estimated Population, 8,468).—*Medical Officer of Health*, C. CHALLINOR, L.R.C.P. Lond.), D.P.H.; *Salary*, £100.

Per 1,000 of Population.	1902.	1901.	Mean of 10 years, 1892-1901.	
Birth-rate.....	38·9 ...	32·4 ...	33·0	
Death-rate	17·9 ...	17·0 ...	17·3	
Zymotic death-rate.....	1·29 ...	2·02 ...	2·16	
Phthisis ,,	0·94 ...	0·71 ...	0·81	
Respiratory ,,	4·48 ...	3·80 ...	3·41	
Rate of deaths under 1 year to 1,000 births.....	163 ...	135 ...	144	

The birth-rate is the highest for some years, and the death-rate exceeds fractionally the mean of the preceding decennial period. The zymotic rate is well below the average of previous years, but the infantile mortality is less favourable. The various averages of the four townships are set out below :—

	Birth- rate.	Death- rate.	Zymotic rate.	Infantile Mortality.
Lowton	47·76	17·03	1·33	90
Kenyon	18·23	6·07	nil.	nil.
Astley	34·38	20·35	2·45	287
Culcheth	31·8	17·86	nil.	136

The infant rate for Astley is extraordinarily high, and Dr. Challinor reports that the large number of deaths of young children is no doubt due to the want of proper feeding and care. Only 2 deaths were due to measles and 4 to diarrhœa. Scarlet fever gave rise to 65 cases 2 deaths; the greatest prevalence was attained in the months of September and December, and the township of Lowton suffered most. One cause of the spread of the disease was a mild and unrecognised case, and another was the general indifference of some of the people to isolate their cases as much as possible in their own homes. A prosecution or two for not taking the necessary precautions would, no doubt, have a salutary effect. Typhoid fever contributed 2 cases 1 death, diphtheria 3 cases 2 deaths, erysipelas 5 cases, and puerperal fever 1 case. "The Infectious Disease (Prevention) Act, 1890," was adopted in October.

Hospital Accommodation.—Forty-three cases were removed to the joint hospital at Astley, viz., scarlet fever 42, and typhoid fever 1.

Disinfection.—No apparatus. House fumigations numbered 48.

Water Supply.—Culcheth is supplied from Warrington, Lowton and Kenyon from Liverpool, and Astley from Manchester.

Sewerage, Scavenging, &c.—Over 200 houses have during the year been connected to the new main sewer at Astley. The sewage is treated at the Tyldesley outfall works. Several offensive ditches have been cleaned out. Scavenging is satisfactorily carried out by arrangement between tenants and farmers.

Sanitary Inspection.—Insanitary property at Astley was the cause of legal proceedings being instituted, when a settlement was arrived at by which the objectionable conditions

were removed. Bakehouses are described as “good,” and slaughter-houses, dairies, and cowsheds as “satisfactory.” The closet accommodation at some of the factories and workshops is not all that could be desired. The number of canal boats inspected was 180, nuisances abated 190, notices served 314, drains cleansed 100, houses repaired 78, houses cleansed 76, yards paved 24, offensive accumulations removed 35, &c.

Limehurst.—(Area in acres, 4,772; Population, Census 1901, 10,338.)—*Medical Officer of Health*, T. COOKE, M.R.C.S.; *Salary*, £40.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate	30·6	...	26·6	...	31·5
Death-rate	14·2	...	15·9	...	18·2
Zymotic death-rate.....	1·35	...	1·93	...	1·86
Phthisis ,,	1·83	...	1·35	...	1·30
Respiratory ,,	2·32	...	2·61	...	3·56
Rate of deaths under 1 year to 1,000 births.....	116	...	145	...	148

The birth-rate for the year under review is fractionally below the average of the 10 years 1892-1901, and the death-rate—with the exception of 1894, when it was exactly the same—is the lowest recorded during that period. The zymotic and infant rates compare favourably with previous years. Measles and whooping cough were each responsible for 2 deaths, and diarrhoea caused 1 death. One case of small-pox occurred at the latter end of the year at Alt, and was promptly removed to the Oldham borough hospital. Scarlet fever of a mild type was somewhat prevalent, 75 cases being reported, with 1 death; 45 of the attacks occurred at Waterloo. Typhoid fever was the cause of 6 cases 3 deaths, diphtheria 6 cases 5 deaths, erysipelas 1 case, and puerperal fever 1 case.

Hospital Accommodation.—The only case treated in

hospital was the small-pox patient mentioned above. A conjoint scheme has been under consideration.

Disinfection.—No apparatus.

Water Supply good, obtained from the Ashton-under-Lyne, &c., joint waterworks.

Sewerage, Scavenging, &c.—The sewage works for Waterloo and Bardsley are completed, and the houses are now being connected to the main sewers. At Cross Bank the sewage works are being constructed as quickly as possible. Dr. Cooke strongly urges the Council to take the work of removal of house refuse into their own hands.

Sanitary Inspection.—There are no public bakehouses in the district. One slaughter-house was closed as unfit for its purpose. Dairies, cowsheds, and farms generally are now receiving the special attention of the Inspector. Sixteen closets were reconstructed. Details are given of the work carried out in the sanitary department including 123 nuisances abated.

Lunesdale.—(Area in acres, 76,267; Population, Census 1901, 6,948.)—*Medical Officer of Health*, W. H. STOTT, L.R.C.P.Ed.; *Salary*, £20.

Per 1,000 of Population.	1902.	1901.	Mean of 10 years, 1892-1901.
Birth-rate	21·1 ...	23·3 ...	22·6
Death-rate	15·1 ...	15·2 ...	13·4
Zymotic death-rate.....	1·15 ...	0·71 ...	0·87
Phthisis „	1·15 ...	1·00 ...	0·88
Respiratory „	2·01 ...	1·87 ...	1·69
Rate of deaths under 1 year to 1,000 births.....	115 ...	111 ...	100

The mortality statistics presented by Dr. Stott vary but little from those of 1901. The birth-rate—which is the lowest

recorded since 1893—is reduced 2·1 per 1,000, while the death-rate remains practically the same. Reference is again made to the prominent part improper feeding plays in the production of the infantile mortality. Measles—notifiable in this district—gave rise to 458 cases and 6 deaths. All the attacks took place between the months of February and May. At Caton, Hornby, Tatham, and the Kelletts school were closed on account of the prevalence of this disease. Whooping cough and diarrhoea were almost absent, no deaths being attributed to these causes. Excepting measles, only 15 notifications were received, viz., scarlet fever 8, typhoid fever 2, diphtheria 1, and erysipelas 4. Both the typhoid fever cases terminated fatally. An outbreak of chicken pox occurred in the autumn, but as this disease is not notifiable, the number of attacks cannot be given. Dr. Stott recommends the Council to add this disease to the schedule of infectious diseases required to be notified, that is, whilst small-pox is prevalent in the country.

Hospital Accommodation.—A small hospital has been erected at Farleton, near Hornby, for the isolation of cases of infectious disease. The hospital—constructed of corrugated iron, lined with matchwood—is erected on an elevated and exceptionally favourable moorland site. Two separate wards are provided, each for the treatment of 2 patients. In the centre of the pavilion is a ward kitchen, with sleeping room for nurse, store room, lavatory, &c. The water is obtained from a well, and suitable drainage also provided. So far the total cost has scarcely exceeded £300.

Disinfection.—No proper appliances.

Water Supply to the greater part of the district is now said to be in “a very satisfactory state, especially the Halton and Caton districts.” At Claughton a private supply has been laid down which provides for the major portion of the houses in the village. At Arkholme some of the houses are situate a considerable distance from the stand pipes. To avoid a

deficiency of water in the summer months it is suggested that the existing reservoir be enlarged or duplicated. There is a pressing need for a good supply to the villages of Whittington, Melling, and Leck.

Sewerage Scavenging, &c.—A Local Government Board Inquiry has been held respecting a scheme for sewerage the east end of Caton, but the result is not yet known. The existing schemes in other parts of the district are working “as satisfactory as can be expected.” Scavenging at Halton is performed by the Parish Council, and a similar arrangement is in operation at Wray. Hornby, Caton, and Brookhouse are in need of a proper system of scavenging.

Sanitary Inspection.—The villages were regularly inspected, and many matters concerning the health and sanitary condition of the district have been dealt with. Apart from matters mentioned above little information is available regarding the sanitary work accomplished. Form C not supplied.

Preston.—(Area in acres, 52,929 ; Population, Census 1901, 15,997).—*Medical Officer of Health*, CHARLES J. TRIMBLE, L.R.C.P.E., D.P.H.; *Salary*, £75.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate	25·8	...	26·3	...	25·8
Death-rate	14·2	...	14·5	...	15·7
Zymotic death-rate.....	1·06	...	1·18	...	1·16
Phthisis „	0·62	...	0·43	...	0·82
Respiratory „	2·50	...	2·81	...	2·92
Rate of deaths under 1 year to 1,000 births.....	130	...	111	...	131

The birth-rate, slightly lower than last year, coincides with the mean of the preceding decennial period ; all the mortality averages compare favourably with the ten years' averages. High birth-rates were recorded in the townships of Hothersall

(56·33), Hutton (35·88), Dutton (34·93), Whittingham (33·54), and Farington (33·4), and low rates in Houghton (10·98), Howick (9·90), and Elston and Ribblesdale (8·0). The highest death-rate occurred in Howick (39·6), Hothersall (28·16), Dutton (21·83), Lea, Ashton, Ingol and Cottam (21·0), and Goosnargh (20·34), and the lowest in Penwortham (10·7), Little Hoole (9·98), Hutton (9·56), Elston and Ribblesdale (8·0), and Houghton (3·66). Measles appeared in epidemic form in the township of Penwortham in January, and whooping cough broke out at Catforth in October. In both districts school closure was adopted as a means to curtail the further spread of the diseases mentioned. Dr. Trimble says he has found school closure to be a valuable measure in combating the dissemination of infectious ailments, and he is year by year more convinced of the importance of this procedure, but at the same time he protests against the growing practice of school managers and teachers closing their schools at the first appearance of epidemic disease amongst the scholars; in many instances closure might be avoided by the immediate exclusion of suspicious cases. Fortunately the diseases above referred to were not of a virulent type, only 2 deaths being ascribed to measles and 4 to whooping cough. Scarlet fever appeared in 12 townships, 54 children acquiring this ailment. The type of this disorder was mild, and only 4 deaths resulted. Sowerbutts Green Roman Catholic School was closed for a month from January 30th, and Fernyhalgh Roman Catholic School was also closed for the same period. Typhoid fever invaded five townships but only contributed 11 cases. Diphtheria and membranous croup produced 12 cases 3 deaths, and the remaining notifications were erysipelas 7 cases, and puerperal fever 1 case.

Hospital Accommodation.—The joint hospital at Fulwood for the treatment of ordinary infectious cases is in course of erection, and at Elswick, where the joint small-pox hospital is being built, a temporary pavilion of 12 beds has been completed.

Disinfection.—No special appliances. Sixty houses were fumigated with sulphur.

Water Supply.—Extensions of the water supply have taken place at Barton, Penwortham, Hutton, Longton, &c. The question of supplying the township of Lea with water has been before the Council, but financial difficulties apparently bar the way. A scheme to supply the village and part of the township of Ribchester has also had attention.

Sewerage, Scavenging, &c.—The sewerage and sewage disposal works at Farington have now been in operation for more than 12 months with satisfactory results. The sewage plant at Ribchester has not been yielding the results to be expected, this is entirely due to lack of good management. The small sewage works at Grimsargh have acted well, and since the Broughton plant has been under the care of an attendant the septic tank has accomplished all that is required of it. The proposal embracing the sewerage of portion of the township of Penwortham and the construction of outfall works is practically in the same position as last year. The reduced scheme is at present before the Local Government Board, together with an application to borrow £11,285. Dr. Trimble again brings under notice the need of a sewerage and sewage disposal scheme for the village of Longton. The question of dealing with the sewage of Ashton Bank has occupied some attention; the Council has done everything possible to rectify matters by ordering the construction of a sewer and septic tanks, but a difficulty is experienced regarding the site for the tanks. Complaints have been made as to offensive smells arising from the sewage farm belonging to the Corporation of Blackburn at Samlesbury, and on inspection the complaints were found to be justified, as the character of the sewage was far from fresh when delivered for irrigation purposes. The Parochial Committees of Farington, Penwortham, Longton, and Ribchester perform the scavenging of their respective districts in a satisfactory manner, and the Medical Officer of Health strongly

advocates the giving of parochial powers to other portions of the rural district, so that similar work can be carried out.

Sanitary Inspection.—Improvement has taken place in the condition of dairies and cowsheds ; but a great number of the old cowsheds are quite inadequate in size to accommodate the number of animals housed therein, so as to provide efficient air space. The only bakehouse is well conducted, and slaughter-houses are as satisfactory as can be expected, considering the character of the buildings. Factories (17), workshops (36), and work places (12) gave rise to no complaints on sanitary grounds, and the 19 canal boats examined revealed no infringements of the Acts. The Inspector (Mr. Ashcroft) reports on 159 nuisances dealt with; these necessitated the service of 62 notices.

Sefton.—(Area in acres, 16,949 ; Estimated Population, 10,272.) — *Medical Officer of Health*, J. C. BRADSHAW, L.R.C.P.E., D.P.H. ; *Salary*, £100.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate.....	28·7	...	26·7	...	22·5
Death-rate	14·2	...	13·3	...	13·3
Zymotic death-rate.....	0·58	...	2·77	...	1·09
Phthisis ,,	0·97	...	0·42	...	1·20
Respiratory ,,	2·92	...	1·91	...	2·29
Rate of deaths under 1 year to 1,000 births.....	105	...	135	...	114

The birth-rate shows an increase of 2·0 per 1,000 as compared with 1901, and is the highest recorded during the past 10 years. The death-rate is fractionally higher than last year, but the zymotic rate and the proportion of infant deaths to births are much reduced. Measles and diarrhoea did not contribute a single death, and only 2 deaths were ascribed to whooping cough. Four cases of small-pox occurred—2 in Fazakerley and 2 in Orrell ; all were promptly removed to the

Liverpool City Hospital. Scarlet fever gave rise to 57 cases 2 deaths (against 30 cases 1 death in 1901), typhoid fever 6 cases, diphtheria 9 cases 2 deaths, and erysipelas 6 cases.

Hospital Accommodation.—An arrangement exists with the Liverpool Corporation to take infectious cases from this district, but, as in the latter part of the previous year, the City Authorities could not take any cases of scarlet fever, and the cottage hospital at Kirkby—usually reserved for small-pox—had to be utilised. The 4 small-pox cases and 3 cases of diphtheria were sent to Liverpool, and 8 cases of scarlet fever were treated at the Kirkby hospital.

Disinfection.—Bedding, clothing, &c., is disinfected by the Liverpool officials under agreement.

Water Supply.—Aintree, Fazakerley, and Orrell are now almost wholly supplied by Liverpool, considerable extensions having taken place during the year. At Sefton the water difficulty is gradually being overcome—a new main has been laid from St. Helen's well, and the Liverpool mains have also here been extended.

Sewerage, Scavenging, &c.—The sewage of the Longmoor Lane district, in Fazakerley, has at last been turned into the Liverpool sewers, and the nuisance so often complained of has ceased to exist. At Kirkby Park sewage is treated in a septic tank, and this has now been augmented by an increased filtration area. At Klondyke (Orrell and Ford) an adequate scheme of sewerage and sewage disposal is “becoming day by day more essential.” Scavenging is performed by contract in West Derby, but the other townships have no proper system.

Sanitary Inspection.—Bakehouses, slaughter-houses, lodging-houses, and workshops have been systematically inspected, and, on the whole, gave satisfaction. Dairies and cowsheds are clean, and their general condition is improving. The Inspector reports on 210 nuisances dealt with,

including 34 drains cleansed and repaired, 84 houses cleansed after infectious disease, 15 back passages flagged and channelled, &c.

Ulverston.—(Area in acres, 127,871; Population, Census 1901, 17,716.)—*Medical Officer of Health*, G. H. PATTERSON, M.R.C.S., D.P.H.; *Salary*, £180.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate	22·4	...	21·8	...	22·9
Death-rate	13·0	...	14·5	...	13·3
Zymotic death-rate.....	1·29	...	0·73	...	0·58
Phthisis ,, 	0·50	...	0·95	...	0·93
Respiratory ,, 	1·63	...	1·69	...	1·76
Rate of deaths under 1 year to 1,000 births	83	...	74	...	85

The statistics presented by Dr. Patterson are again favourable, and vary but little from previous years. The divisional death-rates are as follows :—

	Birth- rate.		Death- rate.		Zymotic Rate.		Infantile Mortality.
Cartmel	25·7	...	14·2	...	1·16	...	41
Hawkshead	16·3	...	10·6	...	0·56	...	109
High Furness	19·1	...	12·5	...	1·34	...	97
Low Furness	26·4	...	13·0	...	1·83	...	83

Whooping cough was the most fatal of the zymotic diseases, 12 deaths being due to this cause, against 2 in the previous year. Measles, although responsible for only 1 death, prevailed to such an extent at Torver and Kirkby Ireleth as to necessitate school closure. Diarrhœa contributed 3 deaths. Scarlet fever was prevalent in various parts of the district, and altogether caused 70 cases and 2 deaths. Typhoid fever was the cause of 8 cases 3 deaths, diphtheria 17 cases 2 deaths, erysipelas 8 cases, and puerperal fever 2 cases.

Hospital Accommodation.—A joint hospital is provided at

High Carley, and the cases removed were scarlet fever 24 and diphtheria 1. From a report presented by the Joint Hospital Board it appears that the average cost per week per patient during the last financial year averaged 12s. 4½d.

Disinfection.—No apparatus. Forty-one houses and a few schools were fumigated.

Water Supply.—Schemes have been adopted or are in progress for the supply of water to Lindale, Headhouse, Staveley, Hawkshead, Coniston, &c., and in several hamlets xtensions have taken place during the year.

Sewerage, Scavenging, &c.—Cartmel Division: The drainage scheme for Kents Bank is in progress, and the long-standing difficulty of dealing with the drainage of Abbott Hall and neighbouring properties will be removed. The scheme for Newton-in-Cartmel seems to have fallen into abeyance. At Cark the work of sewerage is rapidly approaching completion, and for Backbarrow a Special Committee are considering the best means of sewage disposal. Hawkshead Division: A scheme for the sewerage of the village of Bouth has been drafted and is now under consideration. At Haverthwaite the work of sewerage and sewage disposal will shortly be commenced, but Dr. Patterson expresses a doubt as to the efficiency of the scheme. High Furness Division: Owing to extension of building operations at Coniston a proper system of sewerage will, in the near future, be essential. The scheme for Sandside is assuming practical shape. Low Furness Division: Delay is taking place in the evolution of a scheme for Gleaston owing to physical and financial difficulties. The sewerage of Great and Little Urswick is not generally satisfactory. Scavenging: Under urban powers arrangements have been made in the townships of Claife, Coniston, and Hawkshead for the removal of house refuse; Dr. Patterson would like to see similar powers granted to the remaining townships, where, at present, scavenging is not satisfactory.

Sanitary Inspection.—Bakehouses and slaughter-houses are described as “fair,” but dairies and cowsheds are said to be “bad.” Regulations have been adopted but they are not enforced. From the summaries presented by the Divisional Inspectors (Messrs. Ellwood, Gardner, and Cannan) it appears that 1,123 premises were examined respecting nuisances, 128 notices served, &c.; twenty-three privy middens were converted to the water-carriage system, and many others drained or repaired.

Warrington.—(Area in acres, 19,360 ; Estimated Population, 11,059.)—*Medical Officer of Health*, R. SEPHTON, L.R.C.P.E. ; *Salary*, £115.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate.....	27·8	...	28·2	...	28·5
Death-rate	12·6	...	13·2	...	14·3
Zymotic death-rate.....	1·26	...	2·21	...	1·77
Phthisis ,,	0·54	...	0·55	...	0·86
Respiratory ,,	2·44	...	2·12	...	2·36
Rate of deaths under 1 year to 1,000 births.....	74	...	127	...	132

The birth and death rates are both fractionally reduced as compared with last year, and the zymotic and infant rates are also lower. All the averages—except the respiratory rate—are below the mean of the 10 years 1892-1901. The sub-division birth-rates were :—Sankey 31·5, Winwick 30·3, and Rixton 21·3 ; and the death-rates—Sankey 14·04, Winwick 12·5, and Rixton 10·1. Measles prevailed epidemically at Burtonwood during February and March ; as far as could be ascertained about 200 cases occurred in the village, but only 2 deaths resulted. The two schools in this district were closed. Diarrhœa gave rise to 5 deaths, but whooping cough—almost entirely absent—did not cause a single death. Of the notifiable diseases typhoid fever gave most trouble, owing to an

outbreak at the Winwick Asylum, where 32—out of a total of 41 cases—occurred. Seven deaths took place amongst the inmates of the asylum, and 2 among the remaining cases. After careful investigation it was believed the outbreak at the institution named was due to infection following an introduced ambulatory case. Scarlet fever contributed 30 cases 1 death, diphtheria and membranous croup 7 cases 3 deaths, erysipelas 5 cases, and continued fever 1 death.

Hospital Accommodation.—Eight cases—4 scarlet fever and 4 typhoid fever—were removed to the Warrington Borough hospital.

Disinfection.—Steam apparatus available at hospital. Houses are fumigated with sulphur or chlorine.

Water Supply is very much improved. Croft and Houghton, which suffered so much last year, are now supplied by the Warrington Corporation, except in some isolated parts. All other parts of the district, except Martinscroft and Rixton-with-Glazebrook, are well supplied with water.

Sewerage, Scavenging, &c.—"The sewage works at Burtonwood are satisfactory, and doing good work." In the country districts, sewage, as a rule, finds its way into ditches. Scavenging is undertaken by contractors.

Sanitary Inspection.—One house, condemned as unfit for human habitation, was repaired and put into a sanitary state. Bakehouses, slaughter-houses, lodging-houses, and dairies and cowsheds were regularly visited, and appeared to be in good condition. Factories (12) and workshops (34) were also examined; 13 being found dirty and in need of limewashing; notices were served in each case. The Inspector (Mr. Kerfoot) inspected 38 canal boats, the majority of which were carrying offensive cargoes, and the bulkheads, not being properly constructed, allowed the foul water to pass under the cabin floor and lie stagnant until pumped out. At times the stench in

the cabins was so bad as to render them unfit for habitation. Details are given of the various sanitary improvements carried out during the year.

West Lancashire.—(Area in acres, 69,051 ; Estimated Population, 27,398.)—*Medical Officer of Health*, G. E. SCHOLEFIELD, M.D., D.P.H. ; *Salary*, £350.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate	23·3	...	25·5	...	26·4
Death-rate	13·8	..	13·8	...	14·6
Zymotic death-rate.....	1·05	...	1·45	...	1·17
Phthisis ,, 	1·02	...	1·00	...	1·14
Respiratory ,, 	2·26	...	2·57	...	2·61
Rate of deaths under 1 year to 1,000 births.....	129	...	115	...	124

The birth-rate—which is lower than any recorded in the preceding decennial period—is reduced 2·2 per 1,000 of the population as compared with last year, while the death-rate remains exactly the same. The zymotic rate shows a decrease of 0·40, but the infantile mortality is rather less favourable. The township birth-rates varied from 31·95 in Bickerstaffe, 31·53 in Altcar, 30·33 in Hesketh, 30·15 in Halsall, to 16·66 in Rufford, 13·77 in Simonswood, and 5·63 in Bispham. The death-rate was highest in Lydiat 20·73, Melling 19·31, Bickerstaffe 19·09, and Hesketh 18·41, and lowest in North Meols 11·30, Altcar 11·13, Maghull 11·06, Simonswood 11·01, and Bispham 2·31. Measles—although the cause of only 1 death—was much more prevalent than in the previous year ; the great majority of the cases occurring in the townships of Bickerstaffe and Maghull in the months of August and October. In both townships school closure was resorted to, and also at Halsall where an outbreak occurred in December. Altogether 239 cases came to the knowledge of the sanitary officials, but fortunately the majority were of a mild type, and, as already stated,

one terminated fatally. Whooping cough gave rise to 12 deaths, Formby being the township most affected; no action beyond excluding the affected children from school was necessary. There was a welcome decrease in diarrhœa, due, no doubt, to the absence of very hot weather, and only 4 deaths were ascribed to this cause. Small-pox, after being absent from the district for eight years, appeared at the end of November in a common lodging-house at Tarleton. The first case was notified on November 24th, and was removed to the Liverpool hospital the following day. Twelve days later a second case occurred at the same lodging-house. As the Liverpool Authorities had intimated they could take no further cases, the Council with commendable promptitude procured and erected tents, in one of which the second case was isolated. The source of infection was rather obscure, but it was probably brought to the lodging-house by a tramp from Liverpool. Scarlet fever gave rise to 115 cases, in 62 houses, and 4 deaths resulted. The townships chiefly affected were Maghull 29 cases, Tarleton 23 cases, Formby 14 cases, and Halsall 14 cases. In Maghull cases occurred in the early months of the year apparently connected with the outbreak that commenced at the end of 1901, and as the disease was spread by mild cases that were undiscovered until desquamation commenced, Dr. Scholefield advised that the National School should be closed from March 3rd to April 2nd. During this period the various rooms were thoroughly disinfected and cleaned. During the holidays at the end of July a few cases were reported, and after the school re-opened others followed. It was then discovered that children had had the disease during the holidays, one of whom returned to school in an infective state. This was such a flagrant case of neglect on the part of the parents that they were called before the Parochial Committee to show cause why proceedings should not be instituted against them. They pleaded ignorance, and, having been cautioned, no further action was taken. Although a few more cases occurred at intervals

towards the end of the year, after the exclusion of the child mentioned above from school, the spread of the infection from that source ceased. The peculiarity about the outbreak in Tarleton was the fewness of the houses infected to the number of cases. In one house there were 9 cases, the whole family contracting the disease, and in another house there were 6 cases, including the mother. A visit of a person from a distant town was, apparently, the cause of 10 cases, one of which was fatal. Typhoid fever contributed 20 cases 3 deaths. In several instances insanitary surroundings may have been the cause of the disease, and in two cases shell-fish were suspected. Diphtheria, associated with membranous croup, was responsible for 13 cases 5 deaths, erysipelas 18 cases, and puerperal fever 4 cases.

Hospital Accommodation is provided at Holly House, Aughton. A new ward block to accommodate 12 adult patients suffering from scarlet fever was opened in July. The two small-pox cases were isolated as stated above, and 70 patients were treated at Holly House, viz., scarlet fever 66, typhoid fever 3, and diphtheria 1.

Disinfection.—A “Thresh” steam disinfecter, attached to the hospital establishment, is used for bedding, clothing, &c., and infected houses are treated by spraying and fumigation.

Water Supply.—The district is, on the whole, well supplied with water of excellent quality. The Southport Waterworks Company sunk two wells in the township of Aughton, and from this source a large portion of the district is supplied. The water is hard, but otherwise of good quality, and the quantity is unlimited. In some of the outlying parts well water has to be relied on. Of 36 samples examined from these wells 6 were “usable,” while the remainder were unfit for drinking purposes; 15 contained too much organic matter, and 15 showed distinct evidence of pollution with animal refuse.

Sewerage, Scavenging, &c.—Aughton: The sewage of the

southern area is carried to outfall works situated at the south-west end of the township, and is there treated in four covered tanks, and afterwards by land filtration ; the sewage from the northern area is, by agreement, discharged into the Ormskirk sewers. Ainsdale : A Local Government Board Inquiry was held in November into an application to borrow £6,500 to carry out a sewerage scheme comprising the sewerage of the district and the construction of outfall works. Formby : In April an inquiry was held in respect of an application to borrow £41,000 for the purpose of proceeding with the sewage scheme for this township. At the end of the year the results of the inquiries had not been communicated. Bickerstaffe : A small area of this township is connected with the Ormskirk sewers. The remainder of the district is on the cesspool system ; in the places where there is not sufficient land to use up the cesspool contents a nuisance often is caused. Scavenging is performed by contract in Ainsdale and Aughton, and at Formby the Parochial Committee supervise this work. In other townships householders are responsible.

Sanitary Inspection.—Two houses unfit for human habitation were demolished. Bakehouses, slaughter-houses, and lodging-houses have been visited regularly and generally found to be satisfactory. The regulations under the Dairies, Cowsheds, and Milkshops Orders are “of signal benefit” to the district, the regular visits paid by the Inspectors being the means of the premises being kept in a much more cleanly condition than formerly, and there is much less risk of the milk being contaminated. Many visits were made under the Factory and Workshop Act with satisfactory results. Forty-six canal boats were inspected, and their condition gave rise to no complaints. The Inspectors (Messrs. Peach and Bond) report on a large amount of work accomplished in each of the townships under their charge ; altogether 722 nuisances were abated after the service of 362 notices. In 5 instances legal proceedings had to be instituted before the necessary work was carried out.

Whiston.—(Area in acres, 31,281 ; Estimated Population, 19,460.)—*Medical Officer of Health*, EGERTON F. HALL, M.D. ; *Salary*, £150.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate..... ..	26·7	...	26·7	...	26·7
Death-rate	12·4	...	13·0	...	12·9
Zymotic death-rate	1·28	...	1·21	...	1·50
Phthisis ,,	0·61	...	0·84	...	0·76
Respiratory ,,	2·31	...	2·26	...	2·60
Rate of deaths under 1 year to 1,000 births..... ..	126	...	134	...	121

The birth-rate remains the same as last year, and coincides exactly with the mean of the 10 years, 1892-1901, and the mortality statistics vary but little from previous years. Measles broke out at Rainhill, chiefly at the Stoops, the outbreak being so extensive as to necessitate school closure. Five deaths were due to this disease, 4 to whooping cough, and 6 to diarrhœa. A case of small-pox occurred at the end of the year, contracted probably from a tramp with whom the person attacked had been in contact ; the patient was at once removed to hospital. Four cases, also in December, occurred in the workhouse, the infection being conveyed there by a tramp. Scarlet fever notifications were above the average, viz., 71, and 2 deaths resulted. The majority of attacks occurred at Eccleston Lane Ends ; and Knowsley, Speke, Hale, and Halewood suffered to a lesser degree. Typhoid fever was responsible for 15 cases 3 deaths, diphtheria 24 cases 6 deaths, erysipelas 13 cases, and continued fever 1 case.

Hospital Accommodation.—In addition to the small-pox cases, 20 patients suffering from scarlet fever and 1 from typhoid fever were isolated in the sanatorium.

Disinfection.—Steam apparatus available.

Water Supply is, on the whole, good. Improvements

have been made at Rainhill and Whiston, but the township of Bold is not satisfactorily supplied.

Sewerage, Scavenging, &c.—A site has been selected for outfall works at Whiston, and works are in operation at Rainhill. The drainage of Holt is not satisfactory, and complaints have been made of offensive smells from the new main sewer at Ditton. At Whiston, a nuisance was caused by sewage from the workhouse. This has been temporarily remedied; but ere long a proper system of sewage disposal will have to be carried out. Scavenging is said to be efficiently performed.

Sanitary Inspection.—At Hale Road some uninhabited cottages got into a very insanitary condition, and had to be condemned; and in addition one house—where a diphtheria case occurred—was closed as unfit for habitation. Bakehouses and slaughter-houses are described as “good,” and factories and workshops “fair.” Dairies and cowsheds—without regulations—are not inspected. The Inspector (Mr. Fraser) gives details of the sanitary work accomplished in each township. Altogether 83 nuisances were abated, 42 notices served, &c.

Wigan.—(Area in acres, 11,695; Estimated Population, 6,323.)—*Medical Officer of Health*, J. H. WILSON, M.D.; *Salary*, £80.

Per 1,000 of Population.	1902.		1901.		Mean of 10 years, 1892-1901.
Birth-rate.....	30·9	...	27·6	...	32·1
Death-rate	15·1	...	17·0	...	16·9
Zymotic death-rate.....	1·73	...	0·66	...	1·85
Phthisis ,,	0·31	...	1·15	...	1·08
Respiratory ,,	2·53	...	3·30	...	3·63
Rate of deaths under 1 year to 1,000 births.....	127	...	149	...	138

An increase in the birth-rate as compared with last year

of 3·3 per 1,000 of the population is accompanied by a decrease in the general death-rate equal to 1·9. The zymotic rate is much higher than in 1901, but the phthisis, respiratory, and infant rates are more favourable. All the mortality averages are less than the averages of the 10 years 1892-1901. The township of Dalton had a birth-rate of 44·08, Worthington 37·59, Shevington 35·06, Haigh 32·21, Wrightington 28·28, and Parbold 13·72; and the death-rates were :—Dalton 23·20, Haigh 18·30, Shevington 17·53, Wrightington 11·52, Parbold 6·86, and Worthington 3·75. Measles was somewhat prevalent, and school closure had to be resorted to. Three deaths were ascribed to this disease, and 2 to whooping cough. The infectious disease notifications show a considerable increase over the previous year. In all 83 were notified as against 51 in 1901. The increase is accounted for by outbreaks of scarlet fever and diphtheria, the former—the cause of 42 cases 3 deaths—being prevalent in the districts of Shevington, Wrightington, Haigh, and Worthington; and the latter—19 cases 3 deaths—in Haigh and Shevington. Typhoid fever was responsible for 6 cases, erysipelas 13 cases, continued fever 1 case, and puerperal fever 2 cases.

Hospital Accommodation.—Isolation, by means of a cottage, is provided for small-pox only; up to the present, only one case has been admitted (9 years ago).

Disinfection.—No apparatus. Sulphur fumigation relied upon.

Water Supply.—Shevington has a constant supply of pure water from the Anglezarke reservoirs of the Liverpool Corporation. Haigh and Parbold have each their own supply, which in both cases is constant and of good quality. Dalton has plenty of water, which is drawn from wells. Wrightington is dependent on wells and other private sources of supply, with the exception of the Appleby Bridge portion of the township, which receives a good and regular supply from Upholland.

Arrangements have been made with the landowner of Wroughtington for a public supply for that township, and a scheme is now before the Council for its distribution to the inhabitants.

Sewerage, Scavenging, &c.—Cesspools and open ditches are at present the only means of sewage disposal; but the Council have before them plans for the sewerage of the various townships, and for the treatment of the sewage therefrom. Scavenging is carried out by contract, the refuse being used for agricultural purposes.

Sanitary Inspection.—Bakehouses appear to be satisfactory, and the two slaughter-houses are clean and well kept. Dairies and cowsheds—said to be in good order—are not subject to regulations, and do not receive proper supervision. Factories and workshops are all well provided with separate closet accommodation for the sexes, and well drained, lighted, and ventilated, and satisfactory as to general cleanliness. Canal boat inspections numbered 20, and no serious infringements of the Act were noticed. The Inspector served 28 notices, and as a result secured the abatement of 57 nuisances.

* EXTRACT FROM THE METEOROLOGICAL REPORT

BY THE

REV. W. SIDGREAVES,, S.J., F.R.A.S.,

*Of Stonyhurst College Observatory.*SUMMARY OF OBSERVATIONS
FOR 1902.

Results of Observations taken during the Year.			Mean for the last 55 years.
Mean reading of the Barometer	... 29·536in.		29·494in.
Highest	„ on Jan. 31st 30·521in.		30·286in.
Lowest	„ on Dec. 29th 28·270in.		28·252in.
Range of Barometer Readings...	... 2·251in.		2·034in.
Highest Reading of a Max. Therm. on June 28th	... 82·8		81·9
Lowest Reading of a Min. Therm. on February 11th...	... 5·0		15·2
Range of Thermometer Readings	... 77·8		66·7
Mean of all the Highest Readings	... 54·4		54·9
Mean of all the Lowest Readings	... 39·5		40·6
Mean Daily Range	... 14·9		14·3
Deduced Yearly Mean (from Mean of Max. and Min.)	... 45·9		46·8
Mean Temperature (from dry bulb)	... 46·8		46·8
Adopted Mean Temperature	... 46·4		46·8
Mean Temperature of Evaporation	... 44·0		44·5
Mean Temperature of Dew Point	... 41·1		42·1
Mean elastic force of Vapour	... 0·264in.		0·273in.
Mean weight of Vapour in a cubic foot of air	... 3·0gr.		3·3gr.
Mean additional weight required for saturation	... 0·7gr.		0·7gr.
Mean degree of humidity (saturation 1·00)	0·82		0·83
Mean weight of a cubic foot of air	... 540·9gr.		539·2gr.
Total fall of rain in the year	... 36·751in.		46·853in.
Number of days per month on which rain fall	... 17·4		18·5

The Maximum monthly mean height of the Barometer
was in February, 1891, and was ... 29·997in.
The Minimum „ „ in Dec., 1868, and was 28·984in.
The Maximum yearly mean height of the Barometer
was in 1896, and was ... 29·584in.

* Introduced by kind permission.

The Minimum yearly mean height of the Barometer was in 1886, and was	...	...	...	...	29·389in.
The greatest monthly range of the Barometer was in January, 1884, and was	...	...	...	...	2·409in.
The least " " in July, 1852, and was	...	...	...	...	0·505in.
The highest reading of the Barometer during 55 years was on January 9th, 1896, and was...	...	...	...	...	30·597in.
The lowest " " on Dec. 8th, 1886, and was	...	...	...	...	27·350in.
Extreme range	...	...	...	...	3·247in.
The highest temperature was on July 20th, 1901, and was	...	...	...	...	89·0
The lowest " " January 15th, 1881	...	...	...	...	4·6
The highest adopted mean temperature of a month, July, 1901, and was	...	...	...	...	63·2
The lowest " " " " February, 1855	...	...	...	...	28·6
The highest adopted mean temperature of a year, 1868	...	...	...	...	49·1
The lowest " " " " " " 1879	...	...	...	...	44·1
The greatest monthly mean weight of vapour in a cubic foot of air, July, 1852...	...	...	...	...	5·1gr.
The least " " " " February, 1855, and 1895	...	...	...	...	1·4gr.
The greatest fall of rain in a month was in October, 1870, and was	...	...	...	...	13·437in.
The least " " " " " " May, 1859...	...	...	...	...	0·249in.
The greatest number of days on which rain fell in one month, Jan., 1872, Oct., 1873, Dec., 1868...	...	...	...	...	31
The least " " " " " " March, 1852...	...	...	...	...	3
The greatest fall of rain in one year in 1866...	...	...	...	...	62·183in.
The least " " " " " " 1887...	...	...	...	...	31·250in.
The greatest number of days in one year on which rain fell	...	...	...	...	1872... 319
The least " " " " " " 1855...	...	...	...	...	148

SUMMARY OF WIND.

No. of days in the year on which the prevailing wind was	N	NE	E	SE	S	SW	W	NW
	37	45	41	18	28	80	93	23
Mean velocity in miles per hour ...	6·7	8·0	9·3	9·8	13·0	10·4	11·5	6·6
Total No. of miles for each direction...	5942	8670	9152	4213	8719	20015	25717	3644

The total No. of miles registered during the year was 86072.

The max. Velocity of the wind was 44 miles per hour, on 14th and 16th December, at Midnight and 5 a.m.

TOTAL AMOUNT OF SUNSHINE RECORDED ON EACH DAY.

MONTH.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
January	0.7	0.3	0	0	5.8	0	0	0.9	0	0	5.6	5.3	0	0	1.3
February	7.2	7.6	2.0	0	0	0	0.3	2.6	5.8	3.4	0.8	0.6	6.6	4.0	4.0
March...	3.8	2.4	0	0.3	5.2	0.5	4.0	0	2.7	0.7	1.8	0	6.3	7.4	0.3
April	6.2	5.7	2.9	3.9	0	8.8	2.8	4.0	4.3	11.2	7.6	7.7	0	8.2	4.8
May	8.1	4.8	4.5	7.7	9.0	8.9	9.2	6.3	3.3	4.9	4.3	11.3	0	3.2	9.2
June	4.3	7.1	6.7	0.7	4.9	0.4	0.7	1.2	4.5	9.5	1.8	7.9	0	2.4	0.3
July	0.8	4.5	0.6	0	13.2	8.7	2.4	0	0	1.9	12.0	8.8	12.2	3.0	9.2
August	8.6	3.0	1.3	13.6	5.6	0	0	1.5	5.1	11.3	6.8	0.6	5.1	5.6	0
September	2.6	5.5	6.1	8.8	11.5	0.6	7.5	6.9	9.0	0.3	0	4.1	0.3	8.4	10.5
October	2.2	5.2	1.2	7.1	2.5	0.3	0	2.5	0	0	3.8	2.7	5.0	4.7	6.2
November	0.1	2.7	0	0.3	0.3	1.3	3.4	0	0.2	0.6	0	0	0.3	0	5.3
December	0	0	1.4	0.3	0	4.3	0.3	0.1	2.8	0	0	0.5	0	0	1.3

TOTAL AMOUNT OF SUNSHINE RECORDED ON EACH DAY.

(Continued.)

MONTH.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Monthly Total.	Per centage each month
January	0	0	0	0	0	0	0.5	1.3	1.8	0	1.8	4.4	7.2	5.2	42.1	17.0
February	0	0	0	0	0	0	0	0	1.2	0.1	4.8	0	0	0	58.4	21.5
March	0.7	5.3	2.7	2.4	7.4	6.4	0.4	8.5	4.7	3.0	2.3	3.2	3.3	2.9	90.3	24.7
April	8.8	2.2	4.6	4.0	1.5	9.2	6.4	5.8	9.8	13.6	11.0	10.4	4.5	0	179.1	42.7
May	5.1	10.0	10.1	11.7	0	5.0	2.0	13.0	3.1	1.7	10.6	9.4	0	2.1	193.0	39.1
June	0.5	3.6	0	4.9	2.8	6.2	11.1	14.1	13.9	14.5	15.1	12.8	13.3	0	166.3	32.7
July	4.7	2.0	2.8	0.2	0	9.2	9.3	11.0	1.6	3.5	9.8	2.2	7.3	5.5	147.7	29.0
August	2.4	3.8	7.4	5.7	0.1	3.5	10.1	9.0	8.8	0.4	1.7	8.3	8.3	3.4	153.8	33.6
September	9.8	0.8	0	0	0	0.7	9.5	7.2	6.9	2.7	6.3	6.2	1.9	0	144.9	38.2
October	5.4	0	0.5	6.8	7.4	0	0	0	1.3	3.0	0	0	6.3	0	74.1	22.7
November	5.2	5.5	5.0	3.2	0	2.0	0	0	0	0	0	0	0	0	40.7	15.9
December	1.2	0.2	0.1	0	0	0	0	1.1	0	3.2	1.3	0.5	0	1.5	20.1	8.7

VITAL STATISTICS.

TABLE I.—DEATHS registered during the year 1902 in the URBAN SANITARY DISTRICTS of the Administrative County of Lancaster, classified according to Ages and Localities, and showing also the Area and Population of such Localities, and the Birth-Rate and Death-Rate during the year.

NOTES.—(a) The Area and Population of each District are taken from the Census Return.
(b) The Deaths of Residents registered in Public Institutions beyond the limits of the Districts are included in these Tables, and the Deaths of Non-Residents registered in Public Institutions in the Districts are excluded.

URBAN SANITARY DISTRICTS.	Area in Statute Acres.	Population at all ages.		Registered Births.	Annual Rates per 1000 of estimated population.					Rate of Infant Mortality measured by the proportion of deaths under 1 yr. to 1000 births.	Mortality from all causes at subjoined ages.						
		Census, 1901.	Estimate to middle of 1902.		Birth- rate.	Death- rate.	Death- rate from the seven principal Zymotic Diseases.	Phthisis Death- rate.	Respi- ratory Death- rate.		Under 1 year.	1 and 2.	3 and 4.	15 and under 25.	25 and under 65.	65 and upwards.	
ABRAM	1984	6306	6409	246	38·3.	19·3	3·27	0·31	4·83	174	124	43	26	4	8	30	13
ACCRINGTON (Borough) ..	3427	43122	43500	1026	23·5	13·7	1·10	1·58	3·95	130	598	134	57	21	22	240	124
ADLINGTON	1062	4523	4594	141	30·6	14·5	2·32	0·43	2·39	113	67	16	12	7	2	20	10
ALLERTON	1589	1101	1101	17	15·4	5·4	0·90	Nil.	Nil.	58	6	..	2	..	..	..	4
ASHTON-IN-MAKERFIELD ..	6251	18687	19134	743	38·8	19·5	3·81	0·52	4·39	176	375	131	75	11	14	102	42
ASHTON-UNDER-LYNE (Borough)	1346	43890	43890	1228	27·9	19·1	1·48	1·57	3·91	142	842	175	85	36	40	345	161
ASPULL	1906	8388	8388	308	36·7	19·3	5·24	0·47	4·76	152	162	47	39	10	10	31	25
ATHERTON	2265	16211	16211	602	37·1	17·2	3·02	1·54	3·76	134	280	81	43	11	21	88	36
AUDENSHAW	1241	7216	7339	217	29·5	17·1	1·63	0·54	2·04	156	126	34	13	9	4	41	25
BACUP (Borough)	6120	22505	22500	560	24·8	16·4	0·71	1·20	3·68	135	369	76	42	12	18	147	74
BARROWFORD	1385	4959	5000	130	26·0	12·6	1·60	0·60	3·00	123	63	16	9	2	3	17	16

TABLE I.—Continued.

URBAN SANITARY DISTRICTS.	Area in Statute Acres.	Population at all ages.		Registered Births.	Annual Rates per 1000 of estimated population.					Rate of Infant Mortality measured by the proportion of deaths under 1 yr. to 1000 births.	Mortality from all causes at subjoined ages.						
		Census 1901.	Estimate to middle of 1902.		Birth- Rate.	Death- Rate.	Death- Rate from the seven principal Zymotic Diseases.	Phthisis Death- Rate.	Respi- ratory Death- Rate.		Under 1 year.	1 and 5 under 5.	5 and 15 under 15.	15 and 25 under 25.	25 and 65 under 65.	65 and upwards.	
BILLINGE	4596	4232	4250	120	28·2	18·3	1·17	1·17	3·52	166	78	20	11	3	5	23	16
BIRKDALE	2699	14197	15000	286	19·0	14·4	0·26	1·40	2·13	129	216	37	12	9	9	83	66
BLACKPOOL (Borough) ..	3601	47348	52174	1250	23·9	14·9	1·14	1·07	2·03	123	779	154	64	38	26	336	161
BLACKROD	2392	3875	3900	139	35·6	11·5	0·76	0·25	3·33	107	45	15	4	2	2	10	12
BRIERFIELD	807	7288	7500	183	24·4	13·0	2·40	0·93	2·80	136	98	25	19	4	2	31	17
CARNFORTH	1505	3040	3050	78	25·5	12·1	0·32	0·65	1·96	128	37	10	4	2	3	9	9
CHADDERTON.....	3082	24892	25300	759	30·0	17·8	1·77	1·46	3·43	154	451	117	54	21	25	151	83
CHILDWALL	830	219	220	3	13·6	4·5	Nil.	Nil.	Nil.	Nil.	1	..	..	..	..	1	..
CHORLEY (Borough)	3614	26852	27500	790	28·7	17·0	1·41	0·72	4·25	155	469	123	59	13	20	165	89
CHURCH	529	6463	6500	168	25·8	14·7	0·46	1·07	3·07	125	96	21	13	5	3	34	20
CLAYTON-LE-MOORS.....	1059	8153	8300	260	31·3	16·7	1·80	0·48	3·61	157	139	41	23	4	4	42	25
CLITHEROE (Borough) ..	2385	11414	11450	255	22·2	14·4	0·52	0·87	2·27	125	166	32	13	4	6	59	52
COLNE (Borough)	5063	23090	23000	616	26·7	15·9	2·73	1·21	3·34	188	366	116	63	9	11	104	63
CROMPTON	2865	13427	13500	374	27·7	18·7	0·81	0·96	3·92	192	253	72	17	8	18	94	44
CROSTON.....	2347	2102	2120	46	21·6	13·6	1·88	0·47	1·41	21	29	1	3	1	4	10	10
DALTON-IN-FURNESS	7990	13020	13020	408	31·3	17·6	0·53	1·45	3·22	156	230	64	18	10	12	64	62

TABLE I.—Continued.

URBAN SANITARY DISTRICTS.	Area in Statute Acres.	Population at all ages.		Registered Births.	Annual Rates per 1000 of estimated population.					Rate of Infant Mortality measured by the proportion of deaths under 1 yr. to 1000 births.	Mortality from all causes at subjoined ages.					
		Census, 1901.	Estimate to middle of 1902		Birth- Rate.	Death- Rate.	Death- Rate from the seven principal Zymotic Diseases.	Phthisis Death- Rate.	Respi- ratory Death- Rate.		Under 1 year.	1 and 5 under 5.	5 and 15 under 15.	15 and 25 under 25.	25 and 65 under 65.	65 and upwards.
DARWEN (Borough).....	5959	38212	38712	891	23·0	14·6	1·54	0·80	3·25	151	135	58	32	27	174	143
DENTON	2594	14934	15186	422	27·7	15·9	2·17	1·05	2·69	158	67	32	10	8	86	39
DROYLSDEN	1010	11087	11200	359	32·0	17·3	2·67	0·71	4·01	164	194	31	9	8	50	37
ECCLES (Borough)	2057	34369	35000	950	27·1	15·8	2·25	0·82	2·57	112	553	107	75	22	191	124
FAIRSWORTH	1072	14152	14250	417	29·2	17·0	1·82	1·19	2·73	163	243	68	27	12	84	42
FARNWORTH	1504	25925	26000	743	28·5	16·7	2·23	1·07	2·73	200	436	149	51	14	133	60
FLEETWOOD	2510	12082	13000	426	32·7	15·0	1·30	0·92	1·69	105	195	45	24	9	56	52
FULWOOD	2116	2870	*2932	56	19·0	14·3	0·34	0·34	2·72	107	42	6	3	2	9	21
+GARSTON	1673	17289	19100	534	32·7	11·6	1·40	0·73	2·26	108	191	58	25	12	55	27
GOLBORNE	1679	6789	7000	267	38·1	18·8	1·85	0·85	2·57	112	132	30	21	7	41	20
GORTON	1147	26564	27500	1072	38·9	19·0	8·72	1·09	3·74	152	524	164	86	22	146	74
GRANGE	1540	1993	1993	21	10·5	11·0	Nil.	3·51	1·00	95	22	2	..	3	14	2
GREAT CROSBY.....	1907	7555	7768	139	17·8	11·1	0·64	0·51	2·05	136	87	19	11	1	35	20
GREAT HARWOOD	2868	12015	12250	310	25·3	13·5	1·30	0·57	2·04	161	166	50	16	5	52	36
HASLINGDEN (Borough) ..	8196	18543	18543	415	22·3	15·4	2·10	0·80	2·58	146	287	61	33	13	111	53

* Excluding a population of 2,438 in Public Institutions.

+ Garston was incorporated in the City of Liverpool 9th November, 1902; the statistics therefore only refer to the period prior to that date.

TABLE I.—Continued.

URBAN SANITARY DISTRICTS.	Area in Statute Acres.	Population at all ages.		Registered Births.	Annual Rates per 1000 of estimated population.					Rate of Infant Mortality measured by the proportion of deaths under 1 yr. to 1000 births.	Mortality from all causes at subjoined ages.					
		Census, 1901.	Estimate to middle of 1902.		Birth- rate.	Death- rate.	Death- rate from the seven principal Zymotic Diseases.	Phthisis Death- rate.	Respi- ratory Death- rate.		Under 1 year.	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 65.	65 and upwards.
HAYDOCK	2411	8575	8750	341	38·9	15·6	3·65	1·14	3·20	164	56	23	5	8	30	15
HEATON NORRIS	1619	9392	9752	152	15·5	9·5	0·20	0·71	0·92	85	13	3	2	5	38	32
HEYSHAM	1835	3381	3381	97	28·6	17·4	1·47	1·18	0·59	164	16	3	2	1	19	18
HEYWOOD (Borough)	3660	25458	25915	626	24·1	17·4	1·27	1·50	3·58	124	78	44	24	32	184	89
HINDLEY	2612	23504	24232	869	35·8	17·7	2·06	0·66	3·42	181	158	48	15	28	128	52
HORWICH	3257	15084	15387	486	31·6	13·9	1·82	0·52	2·67	96	47	40	11	12	70	34
HURST	638	7145	7145	192	26·8	17·6	0·97	1·81	3·91	156	30	10	8	10	42	26
HUYTON-WITH-ROBY	3053	4661	4661	127	27·2	13·3	0·64	0·64	2·14	165	21	7	3	3	14	14
INCE-IN-MAKERFIELD	2320	21262	21534	888	41·2	22·7	2·83	0·55	8·03	190	169	87	27	20	136	51
IRLAM.....	4620	4335	4700	160	34·0	10·6	0·63	0·42	2·34	106	17	7	1	2	13	10
KEARSLEY	1005	9218	9400	294	31·2	16·2	1·70	0·74	3·29	136	49	23	4	11	39	27
KIRKHAM	857	3693	3693	114	30·8	18·1	2·70	1·08	2·70	166	19	8	5	2	17	16
LANCASTER (Borough) ..	3506	40329	41570	1113	26·7	14·1	1·58	1·17	2·02	141	158	80	29	37	165	121
LATHOM AND BURSCOUGH.	13660	7113	7202	212	29·4	17·4	1·80	0·83	3·33	150	32	12	5	3	33	41
LEES	203	3621	3621	85	23·4	19·3	1·65	1·38	4·41	176	15	9	4	3	27	12
LEIGH (Borough)	6358	40001	41000	1421	34·6	16·1	1·58	1·14	3·95	133	189	79	35	46	211	101

TABLE I.—Continued.

URBAN SANITARY DISTRICTS.	Area in Statute Acres.	Population at all ages.		Registered Births.	Annual Rates per 1000 of estimated population.					Rate of Infant Mortality measured by the proportion of deaths under 1 yr. to 1000 births.	Mortality from all causes at subjoined ages.						
		Census, 1901.	Estimate to middle of 1902.		Birth- rate.	Death- rate.	Death- rate from the seven principal Zymotic Diseases.	Phthisis Death- rate.	Respi- ratory Death- rate.		Under 1 year.	1 and 2.	5 and 15.	15 and 25.	25 and 65.	65 and upwards.	
LEVENSHULME	606	11485	12500	382	30·5	11·2	1·20	0·96	1·28	91	140	35	17	7	4	49	28
LEYLAND	3725	6865	6865	166	24·1	15·7	0·43	1·01	3·78	198	108	33	7	5	8	33	22
LITHERLAND	857	10592	12280	413	33·6	15·7	2·03	0·73	3·42	150	193	62	39	7	12	56	17
LITTLEBOROUGH	7853	11166	11257	253	22·4	14·3	0·97	1·59	2·13	122	162	31	9	3	7	70	42
LITTLE CROSBY	1903	563	572	12	20·9	6·9	Nil.	Nil.	Nil.	Nil.	4	..	..	..	1	3	..
LITTLE HULTON	1699	7294	7294	243	33·3	13·4	1·64	1·23	3·42	102	98	25	12	3	6	30	22
LITTLE LEVER.....	808	5119	5150	142	27·5	12·2	2·13	0·38	2·33	112	63	16	11	2	3	21	10
LITTLE WOOLTON	1389	1091	1091	25	22·9	9·1	Nil.	1·83	0·91	160	10	4	..	..	1	1	4
LONGRIDGE	3285	4304	4304	125	29·0	16·4	0·69	1·62	2·32	128	71	16	4	..	7	30	14
LYTHAM	2464	7185	7500	145	19·3	16·6	0·93	1·20	1·60	179	125	26	8	5	3	43	40
MIDDLETON (Borough) ..	4775	25178	25178	668	26·5	16·0	1·31	1·31	4·21	122	403	82	41	19	13	148	100
MILNROW	5198	8241	8260	176	21·3	14·5	0·60	0·72	2·66	113	120	20	12	8	6	45	29
MORECAMBE (Borough) ..	1801	11798	12470	234	18·7	14·5	1·36	1·28	1·76	119	182	28	20	12	9	57	56
MOSSLEY (Borough)	3622	13452	13498	279	20·6	14·8	0·96	0·81	3·03	107	200	30	16	9	10	85	50
Moss Side	421	26677	27032	475	17·5	12·7	0·85	0·92	2·77	124	344	59	30	11	16	134	94
MUCH WOOLTON	792	4731	4731	128	27·0	12·4	1·47	Nil.	1·90	62	59	8	8	3	2	21	17

TABLE I.—Continued.

URBAN SANITARY DISTRICTS.	Area in Statute Acres.	Population at all ages.		Registered Births.	Annual Rates per 1000 of estimated population.					Rate of Infant Mortality measured by the proportion of deaths under 1 yr. to 1000 births.	Mortality from all causes at subjoined ages.					
		Census, 1901.	Estimate to middle of 1902.		Birth- Rate.	Death- Rate.	Death- Rate from the seven principal Zymotic Diseases.	Phthisis Death- Rate.	Respi- ratory Death- Rate.		Under 1 year.	1 and 2 under 5.	5 and 15. under 15.	15 and 25. under 25.	25 and 65. under 65.	65 and upwards.
NELSON (Borough).....	3466	32816	33000	794	24·0	11·3	1·84	0·78	1·96	109	87	59	32	22	118	55
NEWTON-IN-MAKERFIELD..	3105	16699	17253	603	34·9	14·6	1·39	0·86	3·82	121	73	34	16	9	72	48
NORDEN	5358	3907	3907	83	21·2	17·1	1·53	0·76	3·58	108	9	12	4	1	21	20
ORMSKIRK	574	6857	6857	220	32·0	18·6	0·87	1·02	5·39	154	34	15	3	6	41	29
ORRELL	1617	5436	5436	204	37·5	14·3	1·10	0·18	2·94	117	24	13	3	3	17	18
OSWALDTWISTLE	4885	14192	14500	398	27·4	13·2	0·82	0·75	2·41	138	55	17	12	7	62	39
PADIHAM.....	970	12205	12205	339	27·7	16·1	1·96	0·57	2·53	194	66	31	7	3	57	33
PEMBERTON	2895	21664	22071	866	39·2	17·2	2·67	0·58	3·26	185	161	68	20	14	80	38
POULTON-LE-FYLDE	915	2223	2223	59	26·5	14·8	0·44	Nil.	3·14	101	6	2	..	1	9	15
PREESALL-WITH- HACKINSALL	3232	1423	1450	38	26·2	15·1	0·68	1·37	3·44	78	3	..	2	2	6	9
PRESCOT.....	297	7855	7855	283	36·0	19·8	2·80	1·27	2·80	169	48	7	4	11	50	36
PRESTWICH	3167	*9842	*10088	214	21·2	12·0	0·69	1·38	2·77	79	17	10	6	2	57	30
RADCLIFFE.....	3098	25368	25400	730	28·7	17·7	1·41	1·22	3·66	157	115	59	17	21	151	88
RAINFORD	5877	3359	3344	106	31·6	14·3	0·89	0·29	1·49	113	12	3	1	3	21	8
RAMSBOTTOM.....	6424	15920	15920	340	21·3	15·8	1·00	1·00	3·07	117	40	23	12	9	102	67

* Excluding a population of 2,997 in the County Asylum.

TABLE I.—Continued.

URBAN SANITARY DISTRICTS.	Area in Statute Acres.	Population at all ages.		Registered Births.	Annual Rates per 1000 of estimated population.					Rate of Infant Mortality measured by the proportion of deaths under 1 yr. to 1000 births.	Mortality from all causes at subjoined ages.						
		Census, 1901.	Estimate to middle of 1902.		Birth- rate.	Death- rate.	Death- rate from the seven principal Zymotic Diseases.	Phthisis Death- rate.	Respi- ratory Death- rate.		Under 1 year.	1 and 2.	5 and 15.	15 and 25.	25 and 65.	65 and upwards.	
RAWTENSTALL (Borough).	9535	31053	31170	703	22.5	14.1	0.64	0.61	3.30	137	442	97	29	15	14	166	121
RISHTON.....	2985	7031	7100	183	25.7	12.3	1.40	6.98	1.40	142	88	26	10	1	6	29	16
ROYTON	2145	14881	15050	416	27.6	18.2	1.46	0.93	3.85	153	274	64	29	13	17	97	54
ST. ANNES-ON-THE-SEA..	3342	6838	7914	118	14.9	10.3	0.63	1.38	1.26	59	82	7	4	2	5	34	30
SKELMERSDALE.....	1942	5699	6000	243	40.5	20.1	1.16	1.33	4.16	119	121	29	18	4	11	39	20
SOUTHPORT (Borough) ..	5144	48083	48500	942	19.4	15.3	0.63	0.82	2.37	143	746	135	62	26	22	234	267
STANDISH-WITH- LANGTREE	3266	6303	6413	264	41.1	17.7	2.02	0.93	3.27	136	114	36	27	3	6	32	10
STRETTFORD	3240	30436	30900	670	21.6	12.9	1.16	1.00	2.42	132	401	89	39	14	28	146	85
SWINTON AND PENDLEBURY.....	2212	27005	27200	924	33.9	18.6	3.45	0.66	4.96	146	508	135	84	41	29	141	78
THORNTON.....	2996	3108	3493	132	37.7	12.8	1.14	Nil.	2.29	106	45	14	7	2	1	14	7
TOTTINGTON	2543	6118	6118	110	17.9	12.4	0.49	1.47	3.26	100	76	11	4	4	4	29	24
TRAWDEN	6815	2641	2727	58	21.2	11.7	1.46	0.73	1.83	86	32	5	2	3	1	13	8
TURTON	17335	12355	12400	277	22.3	13.2	1.61	0.32	2.82	72	164	20	19	21	2	62	40
TYLDESLEY-WITH- SHAKERLEY	2490	14843	15500	501	32.3	14.8	2.19	0.58	3.61	143	230	72	26	16	17	71	28

TABLE I.—Continued.

URBAN SANITARY DISTRICTS.	Area in Statute Acres.	Population at all ages.		Registered Births.	Annual Rates per 1000 of estimated population.					Rate of Infant Mortality measured by the proportion of deaths under 1 yr. to 1000 births.	Mortality from all causes at subjoined ages.						
		Census, 1901.	Estimate to middle of 1902.		Birth- rate.	Death- rate.	Death- rate from the seven principal Zymotic Diseases.	Phthisis Death- rate.	Respi- ratory Death- rate.		Under 1 year.	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 65.	65 and upwards.	
ULVERSTON	3172	10064	10060	265	26·3	18·0	2·58	1·29	3·28	128	182	34	30	14	3	51	50
UPHOLLAND	4686	4773	4773	162	33·9	19·2	1·25	1·04	4·81	135	92	22	17	3	7	24	19
URMSTON	992	6594	7000	164	23·4	12·2	2·00	0·28	2·28	85	86	14	12	6	4	24	26
WALTON-LE-DALE	4658	11271	11271	310	27·5	14·3	1·06	0·88	1·96	116	162	36	11	5	8	60	42
WARDLE	3192	4427	4427	73	16·4	11·9	1·58	0·67	1·80	219	53	16	4	3	3	18	9
WATERLOO-WITH- SEAFORTH	952	23102	24236	635	26·2	12·0	0·49	0·70	2·35	124	291	79	20	11	12	88	81
WESTHOUGHTON	5560	14377	14691	483	32·8	15·7	2·38	0·54	4·22	171	232	83	43	19	8	49	30
WHITEFIELD	1406	6588	6686	181	27·0	12·4	0·59	0·44	1·49	71	83	13	1	3	5	40	21
WHITWORTH	4485	9578	9649	218	22·5	15·2	0·41	1·45	3·00	100	147	22	8	7	10	62	38
WIDNES (Borough)	3110	28580	29489	1004	34·0	15·3	1·42	0·50	3·69	135	454	136	54	31	23	155	55
WITHINGTON	5818	33770	*35000	734	20·9	11·7	1·00	0·77	1·91	98	412	72	38	15	17	144	126
WITHNELL	3705	3349	3349	78	23·2	7·7	0·29	1·19	0·59	76	26	6	5	1	1	9	4
WORSLEY	5412	12462	12604	315	24·9	14·9	1·34	1·11	1·58	111	188	35	26	8	7	62	50

* Excluding a population of 2,508 in the Manchester Workhouse,

TABLE II.—DEATHS registered during the year 1902, in the **URBAN SANITARY DISTRICTS** of the Administrative County of Lancaster, classified according to Diseases and Localities, and distinguishing Deaths of Children under five years of age.

Mortality from subjoined causes, distinguishing Deaths of Children under five years of age.																										
URBAN SANITARY DISTRICTS.	Age at Death.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria & Mem. Group.	Croup.	Whooping Cough.	Fever.			Cholera.	Diarrhoea.	Enteritis.	Erysipelas.	Puerperal Fever.	Phthisis.	Other Tuber- cular Diseases.	Cancer.	Bronchitis, Pneumonia, and Pleurisy.	Alcoholism, Cirrhosis of Liver.	Heart Disease.	Epidemic Influenza.	Injuries.	Suicides.	All other Diseases.	
								Typhus	Typhoid	Other continued																
ABRAM	Under 5... 5 upwards	8 1	3 ..	1 1	1	2	4 ..	2	2	2 ..	2 ..	2 4	23 8 6	1 5	24 26
ACCRINGTON (Borough) ..	Under 5... 5 upwards	4 ..	4 ..	3 3	16	11 1	5 2	1 1	4 ..	2 48	9 9	9 ..	30 ..	40 73	2 ..	55 ..	14 8	1 2	95 149
ADLINGTON	Under 5... 5 upwards	5 5	1 1	1	1 ..	2 ..	4 1	3 ..	8 3	2 5	1 2	6 16
ALLERTON	Under 5... 5 upwards	.. ..	.. ..	1 ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	2 ..	.. ..	.. ..	.. ..	1 ..	.. ..	.. ..
ASHTON-IN-MAKERFIELD ..	Under 5... 5 upwards	41 1	1 ..	7 1	3	8 1	13 4	2 2	2 8	5 2	7 ..	45 39	20	1 18	.. 1	80 55
ASHTON-UNDER-LYNE (Borough)	Under 5... 5 upwards	15 ..	1 13	3 2	4 ..	13	14 4	11 ..	14 4	1	69 ..	4 1	25 ..	57 115	8	2 71	1 4	1 11	.. 3	134 247
ASPULL	Under 5... 5 upwards	.. ..	13 ..	1 5	3 ..	.. ..	8 ..	.. ..	1 ..	.. ..	12 ..	1 ..	.. ..	.. ..	.. ..	4 ..	5 ..	2 ..	.. ..	16 24	.. ..	1 7	2 7	.. 2	24 22
ATHERTON	Under 5... 5 upwards	.. ..	10 ..	2 3	9 1	.. ..	.. ..	.. ..	8 1	.. ..	13 ..	.. ..	.. ..	.. ..	.. ..	25 ..	4 2	9 ..	25 36	1 ..	19 ..	1 ..	1 4	.. 4	50 40
AUDENSHAW	Under 5... 5 upwards	.. ..	1 ..	4 ..	3 1	.. ..	.. ..	.. ..	.. ..	1 1	1 ..	.. ..	.. ..	.. ..	1 ..	4 ..	1 3	1 ..	6 9	.. ..	12 ..	.. 4	.. 2	.. 1	31 39

TABLE II.—Continued.

URBAN SANITARY DISTRICTS.		Age at Death.	Mortality from subjoined causes, distinguishing Deaths of Children under five years of age.																									
			Small-pox.	Measles.	Scarlet Fever	Diphtheria & Mem. Croup.	Croup.	Whooping Cough.	Fever.			Cholera.	Diarrhoea.	Enteritis.	Erysipelas.	Puerperal Fever.	Phthisis.	Other Tuber- cular Diseases.	Cancer.	Bronchitis, Pneumonia, and Pleurisy.	Alcoholism, Cirrhosis of Liver.	Heart Disease.	Epidemic Influenza.	Injuries.	Suicides.	All other Diseases.		
BACUP (Borough)	Under 5... 5 upwards	..	5	2	1	1	1	4	..	..	..	1	6	..	1	6	26	5	21	37	..	1	..	2	..	8	51
			..	..	1	1	1	..	..	..	..	..	..	..	9	..	4	..	3	5	5	48	3	19	2	4	3	102
BARROWFORD.....	Under 5... 5 upwards	..	2	1	2	..	..	2	..	..	..	..	..	..	..	..	..	..	1	5	..	..	..	1	..	2	7
			..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	10	2	4	..	..	2	14
BILLINGE	Under 5... 5 upwards	..	..	..	1	..	..	1	..	..	2	..	..	..	..	..	5	3	2	3	..	..	..	2	3	1	19
			..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	12	..	11	1	3	1	10
BIRKDALE	Under 5... 5 upwards	..	..	..	3	..	..	..	..	..	..	6	4	..	..	..	20	3	17	9	2	1	..	..	2	26	69
			..	..	..	7	1	3	..	..	..	..	..	1	1	..	..	..	1	10	51	37	15	75	3	14	10	130
BLACKPOOL (Borough)	..	Under 5... 5 upwards	..	8	2	11	1	1	3	..	..	..	9	3	1	1	1	55	9	..	..	..	..	..	3	14	10	229
			..	3	3	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	6	..	3	..	..	..	9
BLACKROD	Under 5... 5 upwards	..	..	1	..	..	..	..	..	..	..	1	2	..	..	..	1	..	3	7	..	..	..	..	..	..	10
			..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	9	..	8	1	2	2	18
BRIERFIELD	Under 5... 5 upwards	..	10	..	3	..	1	1	..	..	..	1	1	..	..	..	7	2	2	9	..	..	..	1	2	2	16
			..	1	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	12	..	8	2	..	..	8
CARNFORTH	Under 5... 5 upwards	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	1	..	4	1	1	..	..	..	..	11
			..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	5	..	1	..	..	..
CHADDERTON.....	Under 5... 5 upwards	..	10	2	14	5	8	8	..	..	2	3	1	1	..	..	37	4	19	38	2	34	1	4	6	6	79
			..	2	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..	6	..	49	..	..	20	..	6	89
CHILDWALL	Under 5... 5 upwards	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..
		

TABLE II.—Continued.

URBAN SANITARY DISTRICTS.		Age at Death.	Mortality from subjoined causes, distinguishing Deaths of Children under five years of age.																								
			Small-pox.	Measles.	Scarlet Fever.	Diphtheria & Mem. Croup.	Croup.	Whooping Cough.	Fever.			Cholera.	Diarrhoea.	Enteritis.	Erysipelas.	Puerperal Fever.	Phtisis.	Other Tuber- cular Diseases.	Cancer.	Bronchitis, Pneumonia, and Pleurisy.	Alcoholism, Cirrhosis of Liver.	Heart Disease.	Epidemic Influenza.	Injuries.	Suicides.	All other Diseases.	
DROYLSDEN	Under 5. 5 upwards	..	18	..	3	1	..	..	..	..	3	2	..	8	16	..	8	2	..	..	..	1	..	3	..	41
		..	1	..	3	..	..	..	..	..	1	..	..	..	29	..	..	3	..	..	10	2	4	..	32	
		..	11	7	6	..	24	..	..	..	1	11	1	..	27	..	1	13	..	19	63	9	2	..	2	70
		4	15	..	..	8	1	..	..	7	..	..	..	63	..	28	9	..	47	3	5	..	3	153	
		1	2	..	..	1	..	..	..	..	..	..	..	21	..	16	2	10	18	2	..	3	1	41	
FAILSWORTH	Under 5. 5 upwards	..	1	1	2	..	8	1	5	..	1	..	18	..	1	13	..	10	21	2	..	3	6	1	53
		2	..	..	1	..	..	..	4	11	..	..	34	..	27	3	15	37	2	24	3	1	..	..
		..	15	4	4	..	2	..	..	..	17	11	..	..	34	..	1	6	..	..	21	..	1	3	3	99
		6	2	..	..	..	..	..	1	..	..	..	34	..	27	3	..	..	3	21	..	1	2	112	
		5	1	..	1	..	..	..	3	..	..	..	15	..	12	1	..	6	7	2	1	..	2	48	
FLEETWOOD	Under 5. 5 upwards	5	1	..	1	..	..	..	..	..	..	..	15	..	..	..	6	..	3	35	..	8	..	39	
		5	1	..	..	..	..	..	..	..	..	..	15	..	..	..	..	..	..	..	..	..	..	..
		5	1	..	..	..	..	..	..	..	..	..	15	..	..	..	..	..	..	..	..	..	..	..
		5	1	..	..	..	..	..	..	..	..	..	15	..	..	..	..	..	..	..	..	..	..	..
		5	1	..	..	..	..	..	..	..	..	..	15	..	..	..	..	..	..	..	..	..	..	..
FULWOOD	Under 5. 5 upwards	..	1	1	..	3	..	1	1	1	2	3	..	3	..	1	..	2	48
		3	..	..	1	2	..	1	3	1	..	1	39	
		3	..	..	1	2	..	1	3	1	..	1	..	
		3	..	..	1	2	..	1	3	1	..	1	..	
		3	..	..	1	2	..	1	3	1	..	1	..	
*GARSTON	Under 5. 5 upwards	..	1	..	5	..	2	12	7	16	..	1	2	8	16	2	1	1	1	4	..	34
		3	..	..	..	..	2	..	..	..	..	21	..	11	2	8	21	2	9	1	4	2	44	
		3	1	1	..	..	..	2	4	1	..	11	..	6	2	8	7	2	9	..	1	..	27	
		1	..	1	..	..	..	2	1	..	..	11	..	6	2	8	11	2	9	..	1	..	49	
		1	..	1	..	..	..	2	1	..	..	11	..	6	2	8	7	2	9	..	1	..	27	
GOLBORNE	Under 5. 5 upwards	..	3	1	5	1	1	..	..	2	4	1	..	..	7	..	6	2	8	7	2	9	..	1	..	27
		1	..	..	..	..	..	2	1	..	..	11	..	6	2	8	11	2	9	..	1	..	49	
		1	..	1	..	..	..	2	4	1	..	11	..	6	2	8	7	2	9	..	1	..	27	
		1	..	1	..	..	..	2	4	1	..	11	..	6	2	8	11	2	9	..	1	..	49	
		1	..	1	..	..	..	2	4	1	..	11	..	6	2	8	7	2	9	..	1	..	27	
GORTON	Under 5. 5 upwards	..	26	4	2	3	10	..	..	16	8	2	..	..	45	..	30	25	15	45	8	1	..	7	11	103
		..	1	4	2	..	..	4	2	..	4	2	..	..	58	..	30	5	15	58	8	30	3	11	6	89
		2	..	..	..	..	..	4	2	..	..	58	..	30	5	15	58	8	30	3	11	6	89	
		2	..	..	..	..	..	4	2	..	..	58	..	30	5	15	58	8	30	3	11	6	89	
		2	..	..	..	..	..	4	2	..	..	58	..	30	5	15	58	8	30	3	11	6	89	

* Garston was incorporated by the City of Liverpool 9th November, 1902; the statistics refer to period prior to that date.

TABLE II.—Continued.

URBAN SANITARY DISTRICTS.		Mortality from subjoined causes, distinguishing Deaths of Children under five years of age.																										
		Age at Death.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria & Mem. Croup.	Croup.	Whooping Cough.	Fever.			Cholera.	Diarrhœa.	Enteritis.	Erysipelas.	Puerperal Fever.	Phtthisis.	Other Tubercular Diseases.	Cancer.	Bronchitis, Pneumonia, and Pleurisy.	Alcoholism, Cirrhosis of Liver.	Heart Disease.	Epidemic Influenza.	Injuries.	Suicides.	All other Diseases.		
GRANGE	Under 5...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	3	..	..	..	1	7
	5 upwards	..	..	1	1	..	..	..	1	..	..	..	..	..	..	..	1	3	2	..	5	10	1	7	2	4	1	16
	Under 5...	..	..	2	3	1	4	..	1	..	..	3	4	1	..	..	7	4	5	..	10	15	13	..	1	5	2	34
GREAT HARWOOD.....	5 upwards	..	..	..	..	..	..	..	1	..	..	..	1	..	..	..	15	1	10	..	16	32	1	48	..	5	2	48
	Under 5...	..	14	2	..	5	1	..	..	4	..	5	1	2	..	..	2	1	2	..	20	8	..	3	1	5	2	59
	5 upwards	..	8	..	1	6	1	2	..	6	..	7	1	3	1	..	8	1	1	2	20	8	..	3	1	5	2	26
HASLINGDEN (Borough) ..	Under 5...	..	..	..	..	..	..	..	..	..	..	2	1	1	..	..	7	3	..	..	3	6	10	2	1	3	2	19
	5 upwards	..	..	..	..	..	..	..	..	..	..	2	..	1	..	..	7	..	..	..	3	6	10	2	1	3	2	26
	Under 5...	..	..	..	..	..	..	..	..	..	..	2	..	1	1	..	7	1	..	..	3	6	10	2	1	3	2	19
HAYDOCK	Under 5...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	6	10	2	1	3	2	9
	5 upwards	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	6	10	2	1	3	2	19
	Under 5...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	6	10	2	1	3	2	9
HEATON NORRIS	Under 5...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	6	10	2	1	3	2	9
	5 upwards	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	6	10	2	1	3	2	9
	Under 5...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	6	10	2	1	3	2	9
HEYSHAM	Under 5...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	6	10	2	1	3	2	9
	5 upwards	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	6	10	2	1	3	2	9
	Under 5...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	6	10	2	1	3	2	9
HEYWOOD (Borough)	Under 5...	..	3	2	..	9	..	..	1	2	..	6	3	1	..	1	39	8	17	..	35	58	1	36	1	4	2	52
	5 upwards	..	..	..	..	7	..	..	2	..	..	3	1	1	..	1	39	5	17	..	58	58	1	4	2	2	142	
	Under 5...	..	..	..	..	7	2	13	..	12	..	6	1	2	..	1	39	8	17	..	58	58	1	4	2	2	142	
HINDLEY	Under 5...	..	4	5	..	7	2	13	..	12	..	6	1	2	..	1	15	21	..	14	47	36	1	21	2	4	85	
	5 upwards	..	..	..	..	2	..	..	12	..	..	1	2	2	..	5	15	8	..	14	47	36	1	16	4	4	81	
	Under 5...	..	..	..	..	2	..	..	1	..	..	1	2	2	..	5	15	8	..	14	47	36	1	16	4	4	81	
HORWICH	Under 5...	..	14	2	3	3	2	..	..	..	..	2	6	..	..	1	7	8	..	4	15	26	..	1	4	2	33	
	5 upwards	..	..	..	..	1	..	..	1	..	..	..	..	..	..	1	7	1	..	4	15	26	..	1	4	2	59	
	Under 5...	..	..	..	..	1	..	..	1	..	..	..	..	..	..	1	7	1	..	4	15	26	..	1	4	2	59	

TABLE II.—Continued.

URBAN SANITARY DISTRICTS.		Mortality from subjoined causes, distinguishing Deaths of Children under five years of age.																									
		Age at Death.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria & Mem. Croup.	Croup.	Whooping Cough.	Fever.			Cholera.	Diarrhoea.	Enteritis.	Erysipelas.	Puerperal Fever.	Phthisis.	Other Tuber- cular Diseases.	Cancer.	Bronchitis, Pneumonia, and Pleurisy.	Alcoholism, Cirrhosis of Liver.	Heart Disease.	Epidemic Influenza.	Injuries.	Suicides.	All other Diseases.	
HURST	Under 5...	2	1	1	1	8	2	..	25
	5 upwards	2	2	12	20	..	14	..	2	..	35
HUYTON-WITH-ROBY	Under 5...	2	2	4	4	2	..	14
	5 upwards	1	1	3	2	6	5	..	1	1	..	16
INCE-IN-MAKERFIELD	Under 5...	..	3	6	7	2	12	19	52	12	11	..	6	87	..	12	..	3	..	54
	5 upwards	..	..	3	6	..	..	..	..	..	..	1	6	1	3	..	12	3	..	6	86	6	12	9	1	74
IRLAM	Under 5...	..	2	..	1	1	2	2	..	2	6	..	1	12
	5 upwards	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	2	1	..	5	5	..	2	..	..	11
KEARSLEY	Under 5...	..	1	2	4	5	8	1	7	4	..	6	16	..	10	2	29
	5 upwards	..	..	..	1	2	..	..	..	..	..	1	2	..	1	..	7	3	..	6	15	..	10	2	1	26
KIRKHAM	Under 5...	..	2	4	2	4	3	..	7	16
	5 upwards	..	..	2	..	..	..	..	..	..	..	..	..	..	1	..	4	..	..	..	7	..	1	2	..	16
LANCASTER (Borough) ..	Under 5...	..	26	1	9	3	3	..	..	..	..	9	14	1	1	..	1	20	..	20	30	..	43	3	..	117
	5 upwards	1	2	1	7	..	..	..	..	..	..	..	1	1	..	1	48	8	..	20	54	6	43	8	1	144
LATHOM AND BURSCOUGH	Under 5...	..	3	1	2	..	..	..	..	..	..	4	3	2	..	..	1	7	..	5	7	..	13	1	..	13
	5 upwards	..	..	2	..	..	..	..	..	..	..	..	2	2	..	..	5	3	..	5	17	..	13	5	3	25
LEES	Under 5...	..	..	..	1	..	2	..	..	..	..	..	2	..	..	..	..	1	..	2	8	..	7	..	..	10
	5 upwards	..	..	1	1	..	..	..	..	..	..	..	..	..	2	2	5	1	..	2	8	..	1	..	1	16
LEIGH (Borough)	Under 5...	..	6	7	3	..	2	..	..	..	..	25	25	..	..	..	1	6	..	22	73	1	..	6	..	113
	5 upwards	..	..	3	2	..	..	..	..	..	..	4	6	6	..	..	46	5	..	22	89	39	..	15	6	135

TABLE II.—Continued.

URBAN SANITARY DISTRICTS.		Mortality from subjoined causes, distinguishing Deaths of Children under five years of age.																All other Diseases.							
		Small-pox.	Measles.	Scarlet Fever.	Diphtheria & Mem. Croup.	Croup.	Whooping Cough.	Fever.			Cholera.	Diarrhoea.	Enteritis.	Erysipelas.	Puerperal Fever.	Phthisis.	Other Tuber- cular Diseases.		Cancer.	Bronchitis, Pneumonia, and Pleurisy.	Alcoholism, Cirrhosis of Liver.	Heart Disease.	Epidemic Influenza.	Injuries.	Suicides.
Age at Death.								Typhus	Typhoid	Other continued															
LEVENSHULME	Under 5... 5 upwards	..	2	1	2	..	6	2	3	1	5	8	7	1	9	1	3	1	5
	Under 5... 5 upwards	..	..	..	..	..	3	..	..	..	..	7	..	..	..	1	3	2	10	1	7	..	2	..
	Under 5... 5 upwards	..	4	2	2	..	2	1	3	..	8	13	..	2	..	9	3	8	28	..	6	..	4	..	
	Under 5... 5 upwards	..	3	..	1	..	4	2	..	..	..	1	2	..	..	18	1	7	7	3	23	3	1	1
	Under 5... 5 upwards	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..
	Under 5... 5 upwards	..	1	..	1	2	..	..	1	..	6	..	..	..	..	9	2	2	9	1	9	..	3	5
	Under 5... 5 upwards	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Under 5... 5 upwards	..	1	..	1	2	..	..	1	..	3	..	..	..	..	..	..	..	9	1	9	1	1	..
	Under 5... 5 upwards	..	..	..	..	..	..	..	..	..	..	4	..	..	..	..	..	..	16	1	9	..	1	..
	Under 5... 5 upwards	..	1	..	2	2	1	..	..	..	..	4	..	..	..	2	1	5	4	3	3	1	1	..
LITTLE LEVER.....	Under 5... 5 upwards	..	1	1	2	..	1	..	..	..	..	..	..	..	..	2	1	..	..	..	1	..	..	..
	Under 5... 5 upwards	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Under 5... 5 upwards	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Under 5... 5 upwards	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
LITTLE WOOLTON	Under 5... 5 upwards	..	..	..	..	..	3	..	..	..	..	4	1	..	..	7	3	6	4	6	4	..	..	..
	Under 5... 5 upwards	..	..	..	..	1 1	1	..	3	..	1	..	..	..	..	8	..	..	3	9	11	1	4	1
LONGRIDGE	Under 5... 5 upwards	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Under 5... 5 upwards	..	1	..	..	1 1	1	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
LYTHAM	Under 5... 5 upwards	..	..	..	..	1 1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Under 5... 5 upwards	..	..	..	..	1 1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

TABLE II.—Continued.

URBAN SANITARY DISTRICTS.		Age at Death.	Mortality from subjoined causes, distinguishing Deaths of Children under five years of age.																									
			Small-pox.	Measles.	Scarlet Fever.	Diphtheria & Mem. Croup.	Croup.	Whooping Cough.	Fever.			Cholera.	Diarrhoea.	Enteritis.	Erysipelas.	Puerperal Fever.	Phtthisis.	Other Tuber- cular Diseases.	Cancer.	Bronchitis, Pneumonia, and Pleurisy.	Alcoholism, Cirrhosis of Liver.	Heart Disease.	Epidemic Influenza.	Injuries.	Suicides.	All other Diseases.		
		Under 5... 5 upwards	..	14	..	2	1	..	7	..	1	..	..	..	4	2	1	..	1	32	4	3	1	43	..	4	..	48
	MIDDLETON (Borough) ..	Under 5... 5 upwards	..	4	..	1	1	..	..	..	..	..	..	..	..	1	1	..	6	..	36	7	7	..	9	..	2	88
	MILNROW	Under 5... 5 upwards	..	1	3	..	1	..	..	..	..	..	..	..	1	3	2	..	..	7	15	2	7	..	2	1	..	13
	MORECAMBE	Under 5... 5 upwards	..	5	1	3	..	..	1	..	..	..	..	..	2	1	..	15	7	1	13	4	1	14	..	2	..	13
	MOSSLEY (Borough)	Under 5... 2 upwards	1	7	..	1	2	..	..	..	..	..	..	..	1	4	3	11	4	..	13	7	20	..	6	1	..	16
	MOSS SIDE	Under 5... 5 upwards	..	3	2	3	1	..	8	..	..	..	..	..	2	2	..	25	11	29	18	7	3	31	..	3	..	35
	MUCH WOOLTON	Under 5... 5 upwards	..	2	..	..	..	..	..	..	..	..	..	..	1	..	..	..	2	3	2	3	8	..	..	..	..	8
	NELSON (Borough)	Under 5... 5 upwards	1	12	4	5	1	1	13	..	1	1	..	..	7	1	..	26	3	13	29	2	28	..	3	1	..	70
	NEWTON-IN-MAKERFIELD .	Under 5... 5 upwards	..	4	1	9	..	1	1	..	1	6	..	..	10	1	..	15	6	4	24	1	15	3	9	..	..	82
	NORDEN	Under 5... 5 upwards	..	5	..	..	..	..	..	..	..	..	..	..	..	1	..	3	..	2	7	2	5	1	..	..	..	42
	ORMSKIRK	Under 5... 5 upwards	..	2	2	1	..	..	..	..	..	..	..	..	1	..	..	7	..	1	12	..	10	..	3	..	..	51
			..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	25	..	..	..	..	..	..	30
			..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	25	..	..	..	..	..	..	33

TABLE II.—Continued.

		Mortality from subjoined causes, distinguishing Deaths of Children under five years of age.																								
		Small-pox.	Measles.	Scarlet Fever.	Diphtheria & Mem. Croup.	Croup.	Whooping Cough.	Fever.			Cholera.	Diarrhoea.	Enteritis.	Erysipelas.	Puerperal Fever.	Phtisis.	Other Tubercular Diseases.	Cancer.	Bronchitis, Pneumonia, and Pleurisy.	Alcoholism, Cirrhosis of Liver.	Heart Disease.	Epidemic Influenza.	Injuries.	Suicides.	All other Diseases.	
URBAN SANITARY DISTRICTS.	Age at Death.	Under 5. 5 upwards	3	1	8	..	1	..	1	..	16
	Orrell .....	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	8	..	6	..	..	19
	Oswaldtwistle .....	..	1	..	2	1	3	..	..	..	..	..	..	..	..	..	8	..	14	..	1	..	..	..	32
	Padiham	1	12	2	3	3	1	..	..	..	..	..	..	..	..	..	3	..	19	..	1	..	..	..	47
	Pemberton	1	1	1	2	..	..	4	..	..	..	32	16	..	..	1	15	..	45	..	1	..	1	..	50
	Poulton-le-Fylde .....	..	8	4	4	..	4	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	..	..	97
	Prestall-with-Hackinsall .....	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	6	..	16	..	..	..	67
	Prescot .....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	8	..	..	..	5
	Prestwich	1	8
	Radcliffe	3	1
Rainford .....	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	37	..	1	..	..	..	10
		..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	56	..	8	..	..	..	13

TABLE II.—Continued.

URBAN SANITARY DISTRICTS.		Age at Death.	Mortality from subjoined causes, distinguishing Deaths of Children under five years of age.																									
			Small-pox.	Measles.	Scarlet Fever.	Diphtheria & Mem. Group.	Group.	Whooping Cough.	Fever.			Cholera.	Diarrhœa.	Enteritis.	Erysipelas.	Puerperal Fever.	Phthisis.	Other Tuber- cular Diseases.	Cancer.	Bronchitis, Pneumonia, and Pleurisy.	Alcoholism, Cirrhosis of Liver.	Heart Disease.	Epidemic Influenza.	Injuries.	Suicides.	All other Diseases.		
									Typhus	Typhoid	Other continued																	
RAMSBOTTOM.....		Under 5... 5 upwards	..	10	..	2	1	1	..	..	1	4	..	1	..	16	1	..	13	22	..	3	1	29	..	1	..	3
RAWTENSTALL (Borough).		Under 5... 5 upwards	..	..	1	1	..	6	..	..	..	12	..	..	..	1	8	6	26	38	..	6	48	..	1	..	5	3
RISHTON		Under 5... 5 upwards	..	..	1	3	..	..	..	1	1	2	..	..	..	7	2	3	5	7	..	..	6	1	..	1	..	1
ROYTON		Under 5... 5 upwards	..	10	1	4	3	..	..	..	..	2	2	..	..	1	5	4	8	19	..	1	14	2	2	2	4	4
ST. ANNES-ON-THE-SEA..		Under 5... 5 upwards	..	1	..	..	..	..	..	2	..	1	..	..	..	11	2	..	5	1	..	6	..	..	1	..	1	..
SKELMERSDALE.....		Under 5... 5 upwards	..	5	..	..	..	..	..	1	1	..	..	..	..	8	2	2	4	12	..	1	10	..	1	5	1	1
SOUTHPORT (Borough) ..		Under 5... 5 upwards	..	7	1	4	1	3	..	4	..	2	2	..	1	40	16	9	46	29	..	10	89	1	3	12	4	4
STANDISH-WITH- LANGTREE.....		Under 5... 5 upwards	..	6	2	..	2	4	..	..	..	6	..	..	..	2	5	..	1	7	..	4	..	..	4	..	..	..
STRET福德		Under 5... 5 upwards	..	1	3	11	..	6	..	3	..	2	1	..	..	31	6	6	22	29	..	4	1	34	1	9	5	5
SWINTON AND PENDLEBURY.....		Under 5... 5 upwards	..	6	14	22	..	..	..	1	11	10	2	..	..	17	19	4	12	52	..	2	32	1	2	8	2	2

TABLE II.—Continued.

Mortality from subjoined causes, distinguishing Deaths of Children under five years of age.																										
URBAN SANITARY DISTRICTS.	Age at Death.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria & Mem. Group.	Croup.	Whooping Cough.	Fever.			Cholera.	Diarrhoea.	Enteritis.	Erysipelas.	Puerperal Fever.	Phthisis.	Other Tuber- cular Diseases.	Cancer.	Bronchitis, Pneumonia, and Pleurisy.	Alcoholism, Cirrhosis of Liver.	Heart Disease.	Epidemic Influenza.	Injuries.	Suicides.	All other Diseases.	
								Typhus	Typhoid	Other continued																
THORNTON	Under 5... 5 upwards	..	..	1	..	..	3	..	..	..	..	..	..	..	..	..	2	2	4	..	5	..	..	..	..	14 10
	Under 5... 5 upwards	..	..	1	..	..	1	..	..	..	1	1	..	..	..	9	..	2	7 13	..	11	2	1	1	..	4 20
	Under 5... 5 upwards	1	2	1	..	..	..	..	..	..	..	..	..	..	..	2	..	2	3 2	..	6	..	..	..	2 11	
	Under 5... 5 upwards	1	3	2	2	2	2	..	1	..	1	1	..	..	2	4	2	8	9 26	3 2	14	1	2	5	..	14 45
	Under 5... 5 upwards	7	1	3	3	..	1	..	1	..	6	..	..	1	1	9	2	6	28 28	2	9	3	4	2	..	40 53
	Under 5... 5 upwards	..	..	1	7	..	10	..	..	..	1	1	..	..	..	13	1	5	19 14	3	5	1	2	..	22 63	
	Under 5... 5 upwards	2	..	1	..	..	2	..	..	..	2	..	..	..	..	5	2	3	13 10	..	4	2	..	..	17 27	
	Under 5... 5 upwards	1	1	2	1	3	4	..	..	..	1	..	1	..	..	3	1	7	5 11	4	6	3	5	..	8 16	
	Under 5... 5 upwards	3	4	1	..	..	..	..	..	..	1	2	1	1	1	10	5	5	8 14	3	20	..	2	4	..	23 48
	Under 5... 5 upwards	2	..	..	..	1	3	3	..	..	4	1	..	..	..	3	1	2	4 4	..	6	..	1	..	..	7 11

TABLE II.—Continued.

URBAN SANITARY DISTRICTS.		Age at Death.	Mortality from subjoined causes, distinguishing Deaths of Children under five years of age.																									
			Small-pox.	Measles.	Scarlet Fever.	Diphtheria & Mem. Group.	Croup.	Whooping Cough.	Fever.			Cholera.	Diarrhoea.	Enteritis.	Erysipelas.	Puerperal Fever.	Phtisis.	Other Tuber- cular Diseases.	Cancer.	Bronchitis, Pneumonia, and Pleurisy.	Alcoholism, Cirrhosis of Liver.	Heart Disease.	Epidemic Influenza.	Injuries.	Suicides.	All other Diseases.		
WATERLOO-WITH- SEAFORTH	Under 5...	5 upwards	..	1	1	..	2	5	5	..	16	3	..	27	1	1	..	3	..	2	49
	Under 5...	5 upwards	..	..	..	2	..	..	..	..	..	..	..	..	..	..	16	..	..	30	4	23	..	2	..	2	96
WESTHOUGHTON	Under 5...	5 upwards	..	6	8	2	6	..	..	..	..	..	..	..	4	7	1	..	2	34	..	..	..	1	..	1	54
	Under 5...	5 upwards	..	2	4	2	..	..	..	..	..	..	..	..	..	1	7	1	4	28	1	7	2	5	..	1	39
WHITEFIELD	Under 5...	5 upwards	..	..	..	1	..	..	..	..	..	..	..	..	..	..	3	..	..	2	..	16	..	..	..	..	11
	Under 5...	5 upwards	..	..	1	1	..	..	..	..	..	..	..	..	1	..	..	..	..	8	1	16	..	..	..	..	31
WHITWORTH	Under 5...	5 upwards	..	1	..	..	..	..	..	..	..	..	..	..	1	..	13	3	2	6	..	1	..	1	4	..	16
	Under 5...	5 upwards	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	23	23	..	17	1	4	..	52	
WIDNES (Borough).....	Under 5...	5 upwards	..	10	..	6	2	..	..	2	28	1	..	..	..	..	15	10	6	40	..	26	..	2	10	3	89
	Under 5...	5 upwards	..	..	2	5	..	..	..	..	7	..	..	..	..	..	..	10	69	69	2	26	..	10	3	94	
WITHINGTON.....	Under 5...	5 upwards	..	15	2	3	1	..	..	..	..	..	..	..	3	1	26	7	32	21	..	2	2	6	7	53	
	Under 5...	5 upwards	..	2	5	3	..	..	..	..	..	..	..	..	..	..	..	4	34	46	8	34	9	6	7	117	
WITHNELL.....	Under 5...	5 upwards	..	1	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	1	..	..	..	1	..	6	
	Under 5...	5 upwards	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	1	..	4	..	..	..	7	
WORSLEY	Under 5...	5 upwards	..	4	2	2	..	..	..	..	6	..	..	..	3	..	14	2	12	8	..	6	..	1	5	1	33
	Under 5...	5 upwards	..	..	1	2	..	..	..	..	..	..	..	..	..	..	..	1	12	22	..	6	..	5	1	59	

TABLE III.—DEATHS registered during the year 1902, in the **RURAL SANITARY DISTRICTS** of the Administrative County of Lancaster, classified according to Ages and Localities, and showing also the Area and Population of such Localities, and the Birth-rate and Death-rate therein during the year.

NOTES :—(a) The Area and Population of each District are taken from the Census Return.

(b) The Deaths of Residents registered in Public Institutions beyond the limits of the Districts are included in these Tables, and the Deaths of Non-Residents registered in Public Institutions in the Districts are excluded.

RURAL SANITARY DISTRICTS.	Area in Statute Acres.	Population at all ages.		Registered Births.	Annual Rates per 1000 of estimated population.					Rate of Infant Mortality measured by the proportion of deaths under 1 yr. to 1000 births.	Mortality from all causes at subjoined ages.						
		Census, 1901.	Estimate to middle of 1902.		Birth- Rate.	Death- Rate.	Death- Rate from the seven principal Zymotic Diseases.	Phthisis Death- Rate.	Respi- ratory Death- Rate.		Under 1 year.	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 65.	65 and upwards.	
BARTON-UPON-IRWELL ..	6872	8065	8244	213	25·8	16·7	2·54	0·84	2·66	117	138	25	12	10	12	49	30
BLACKBURN	20150	*8238	8238	205	24·8	13·1	0·84	0·60	2·79	117	108	24	11	..	5	31	37
BURNLEY	41097	16589	16600	390	23·4	12·9	2·10	0·54	2·71	107	215	42	24	18	7	72	52
BURY	12014	8088	8175	175	21·4	12·6	1·10	0·24	2·56	154	103	27	10	3	6	29	28
CHORLEY	39988	19310	19700	603	30·6	15·6	1·42	0·71	3·14	145	308	88	31	18	8	88	75
CLITHEROE (Lancashire portion)	33459	6726	6726	116	17·2	12·9	0·89	1·04	2·52	69	87	8	3	3	7	31	35
FYLDE.....	40114	11220	11350	322	28·3	13·9	1·58	1·05	1·23	74	158	24	18	10	9	52	45
GARSTANG	57380	10437	10437	251	24·0	13·3	0·38	0·67	1·53	67	139	17	11	3	13	39	56
LANCASTER	54503	8837	8837	232	26·2	16·7	1·13	0·79	2·48	125	148	29	11	9	8	47	44
LEIGH.....	11574	8410	8468	330	38·9	17·9	1·29	0·94	4·48	163	152	54	19	3	4	43	29

* Excluding population of district added to Blackburn Borough, 9th November, 1901.

TABLE III.—Continued.

RURAL SANITARY DISTRICTS.	Area in Statute Acres.	Population at all ages.		Registered Births.	Annual Rates per 1000 of estimated population.					Rate of Infant Mortality measured by the proportion of deaths under 1 yr. to 1000 births.	Mortality from all causes at subjoined ages.						
		Census, 1901.	Estimate to middle of 1902.		Birth- Rate.	Death- Rate.	Death- Rate from the seven principal Zymotic Diseases.	Phthisis Death- Rate.	Respi- ratory Death- Rate.		Under 1 year.	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 65.	65 and upwards.	
LIMEHURST	4772	10338	10338	317	30·6	14·2	1·35	1·83	2·32	116	37	12	10	6	50	32	
LUNESDALE	76267	6948	6948	147	21·1	15·1	1·15	1·15	2·01	115	17	10	4	7	30	37	
PRESTON	52929	15997	*15997	413	25·8	14·2	1·06	0·62	2·50	130	54	15	10	4	69	76	
SEFTON	16949	9384	10272	295	28·7	14·2	0·58	0·97	2·92	105	31	19	6	5	48	37	
ULVERSTON	127871	17716	17716	397	22·4	13·0	1·29	0·50	1·63	83	33	15	11	13	77	82	
WARRINGTON	19360	10496	11059	308	27·8	12·6	1·26	0·54	2·44	74	23	15	9	8	33	52	
WEST LANCASHIRE.....	69051	26645	27398	641	23·3	13·8	1·05	1·02	2·26	129	83	32	7	15	138	105	
WHISTON	31281	18961	19460	521	26·7	12·4	1·28	0·61	2·31	126	66	28	8	10	71	60	
WIGAN	11695	6045	6323	196	30·9	15·1	1·73	0·31	2·53	127	25	14	5	6	25	21	

* Excluding a population of 2,432 in Public Institutions.

TABLE IV.—DEATHS registered during the year 1902, in the **RURAL SANITARY DISTRICTS** of the Administrative County of Lancaster, classified according to Diseases and Localities, and distinguishing Deaths of Children under five years of age.

RURAL SANITARY DISTRICTS.		Age at Death.	Mortality from subjoined causes, distinguishing Deaths of Children under five years of age.																							
			Small-pox.	Measles.	Scarlet Fever.	Diphtheria & Mem. Croup.	Croup.	Whooping Cough.	Fever.			Cholera.	Diarrhoea.	Enteritis.	Erysipelas.	Puerperal Fever.	Phthisis.	Other Tuber- cular Diseases.	Cancer.	Bronchitis, Pneumonia, and Pleurisy.	Alcoholism, Cirrhosis of Liver.	Heart Disease.	Epidemic Influenza.	Injuries.	Suicides.	All other Diseases
BARTON-UPON-IRWELL ..		Under 5... 5 upwards	..	2	2	5	..	2	.. 1	..	..	..	1	1	..	.. 1	.. 7	2	.. 10	5	.. 4	1	.. 3	.. 7	.. 1	16 34
BLACKBURN		Under 5... 5 upwards	..	3	..	..	..	1	..	.. 2	..	..	1	..	..	..	.. 5	..	..	9	.. 1	..	.. 4	2	.. 1	19 30
BURNLEY		Under 5... 5 upwards	1	11	5	3	..	1	..	.. 1	1	..	1	4	.. 1	..	.. 9	2	.. 9	12	..	.. 28	.. 2	2	.. 2	23 48
BURY		Under 5... 5 upwards	..	1	..	3	1	2	..	..	..	..	1	2	.. 1	..	.. 2	1	1	7	.. 2	1	..	.. 2	.. 1	18 29
CHORLEY		Under 5... 5 upwards	..	6	3	2	1	4	..	.. 2	..	..	3	8	.. 2	.. 3	2	4	.. 14	30	.. 3	.. 20	.. 1	3	.. 4	53 77
CLITHEROE (Lancashire portion)		Under 5... 5 upwards	..	..	.. 2	1	..	..	..	..	..	..	..	2	..	..	7	2	.. 5	5	.. 3	.. 8	.. 3	..	.. 2	3 29

TABLE IV.—Continued.

RURAL SANITARY DISTRICTS.		Mortality from subjoined causes, distinguishing Deaths of Children under five years of age.																									
		Age at Death.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria & Mem. Croup.	Croup.	Whooping Cough.	Fever.			Cholera.	Diarrhoea.	Enteritis.	Erysipelas.	Puerperal Fever.	Phtisis.	Other Tuber- cular Diseases.	Cancer.	Bronchitis, Pneumonia, and Pleurisy.	Alcoholism, Cirrhosis of Liver.	Heart Disease.	Epidemic Influenza.	Injuries.	Suicides.	All other Diseases.	
FYLDE	Under 5..	..	6	3	2	1	..	..	..	..	..	..	..	..	2	..	12	3	11	5	..	1	..	..	..	..	22
	5 upwards	..	1	2	..	..	..	..	..	..	..	..	..	..	1	..	9	2	19	9	2	19	..	..	..	..	50
GARSTANG	Under 5..	1	1	..	..	..	..	..	..	..	..	..	..	6	2	5	5	..	1	..	..	3	..	16
	5 upwards	1	1	..	..	..	..	..	..	..	..	..	..	..	1	3	13	11	4	13	..	1	3	2	60
LANCASTER	Under 5..	4	..	5	..	..	..	..	..	..	..	3	1	7	2	10	8	..	17	..	1	3	..	21
	5 upwards	1	..	..	..	..	..	..	..	..	..	..	..	3	3	17	14	..	17	..	1	3	2	46
LEIGH.....	Under 5..	..	2	2	2	1	..	..	..	..	..	..	..	..	2	1	8	1	3	23	..	11	1	..	3	..	36
	5 upwards	1	..	..	..	..	..	..	..	..	..	..	4	..	..	15	15	11	..	..	1	1	31
LIMEHURST	Under 5..	..	2	..	4	..	2	..	..	..	..	..	..	..	..	1	15	..	..	10	..	1	..	1	12	..	24
	5 upwards	1	1	..	..	..	..	..	..	..	..	..	1	..	4	..	..	14	..	11	..	..	1	..	40
LUNESDALE	Under 5..	..	3	..	..	1	..	..	..	..	..	..	..	..	..	..	8	1	3	6	..	17	..	1	2	..	14
	5 upwards	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	8	..	..	8	..	17	..	1	2	..	35
PRESTON	Under 5..	4	1	1	4	..	..	..	..	..	..	3	1	9	1	2	15	13	..	24	1	2	3	4	36
	5 upwards	..	2	..	2	..	..	..	..	..	..	..	..	..	..	1	9	2	2	27	4	24	2	5	5	58	
SEFTON	Under 5..	1	2	..	2	..	..	..	..	..	..	5	..	10	..	..	1	13	..	1	2	2	5	..	23
	5 upwards	1	..	..	..	..	..	..	..	..	..	1	..	10	..	..	4	17	4	14	2	5	..	37	
ULVERSTON	Under 5..	..	1	1	2	..	12	..	..	..	..	..	..	..	1	9	2	7	13	9	..	21	..	3	3	..	18
	5 upwards	1	..	..	..	..	..	..	..	..	..	..	..	1	9	7	2	20	4	21	7	3	3	91	
WARRINGTON.....	Under 5..	..	2	..	2	..	..	..	..	..	..	..	..	..	..	6	..	1	7	12	1	20	2	1	1	..	13
	5 upwards	1	1	..	..	..	..	..	..	..	..	1	..	6	..	..	..	15	1	20	..	11	1	..	35

TABLE IV.—Continued.

RURAL SANITARY DISTRICTS.		Age at Death.	Mortality from subjoined causes, distinguishing Deaths of Children under five years of age.																							
			Small-pox.	Measles.	Scarlet Fever.	Diphtheria & Mem. Croup.	Croup.	Whooping Cough.	Fever.			Cholera.	Diarrhoea.	Enteritis.	Erysipelas.	Puerperal Fever.	Phthisis.	Other Tuber- cular Diseases.	Cancer.	Bronchitis. Pneumonia, and Pleurisy.	Alcoholism, Cirrhosis of Liver	Heart Disease.	Epidemic Influenza.	Injuries.	Suicides.	All other Diseases.
WEST LANCASHIRE.....	Under 5... 5 upwards	..	1	2	4	..	12	..	..	..	..	..	2	2	2	..	28	4	1	26	..	2	1	1	..	57
		..	..	1	..	..	..	..	3	..	..	..	2	2	..	..	28	3	22	36	7	42	5	9	1	101
WHISTON	Under 5... 5 upwards	..	2	2	5	..	4	..	..	..	..	..	5	1	..	..	10	10	..	24	..	1	..	4	..	35
		..	2	..	1	..	..	..	3	..	..	..	1	2	..	..	10	5	10	21	..	21	..	7	..	66
WIGAN	Under 5... 5 upwards	..	3	1	1	1	2	..	..	..	..	..	..	..	2	..	2	2	..	9	..	1	..	..	..	17
		..	..	2	2	..	..	..	..	..	..	..	..	..	..	..	2	..	..	7	..	5	..	4	..	34

TABLE V.—DEATHS and CASES NOTIFIED (or ascertained) in 132 Districts supplying Monthly Returns during the Year ending December 31st, 1902.

MONTH.	Small-pox.		Diphtheria.		Membranous Group.		Erysipelas.		Scarlet Fever.		FEBR.								Measles.*		Chicken Pox.		Whooping Cough.		Total of preceding columns.		Deaths from				Deaths from all causes.
	Notified Cases.	Deaths.	Notified Cases.	Deaths.	Notified Cases.	Deaths.	Typhus		Enteric		Other or doubtful		Puerperal.		Measles.*		Chicken Pox.		Whooping Cough.		Notified Cases.	Deaths.	Notified Cases.	Deaths.	Diarrhea and English Cholera.	Bronchitis, Pneumonia, and Pleurisy.	Influenza.	Alcoholism, Peripheral Neuritis, and Allied causes.			
							Notified Cases.	Deaths.	Notified Cases.	Deaths.	Notified Cases.	Deaths.	Notified Cases.	Deaths.	Notified Cases.	Deaths.	Notified Cases.	Deaths.	Notified Cases.	Deaths.											
Jan.....	2	..	217	35	27	15	137	3	772	25	..	..	142	23	3	1	16	10	202	45	..	..	22	1518	184	21	468	25	8	2285
Feb. ..	7	..	211	30	19	9	110	8	780	29	..	..	92	14	5	..	19	12	274	77	3	1	18	1548	198	18	595	24	15	2437
March...	59	4	334	46	15	13	110	8	794	34	..	..	129	18	2	..	13	10	383	50	13	1	20	1852	204	20	526	9	8	2307
April ..	21	3	195	29	12	10	108	5	659	28	..	..	126	25	7	..	17	10	495	56	17	1	25	1657	192	20	504	21	17	2327
May ..	20	..	166	29	21	13	116	3	648	25	2	..	96	13	3	1	13	9	219	68	20	1	43	1336	205	25	504	24	14	2384	
June ..	4	..	141	22	8	3	91	1	517	13	..	..	80	12	4	..	5	1	76	78	18	..	30	970	160	28	439	27	8	2139
July ..	26	1	159	19	13	10	79	2	555	19	..	..	122	14	4	..	4	2	122	49	13	..	32	1119	148	37	246	10	16	1870
August..	16	1	121	30	3	4	93	2	592	25	2	1	120	21	2	1	12	6	161	52	7	1	26	1164	170	54	295	10	12	1909	
Sept. ..	38	..	145	32	14	6	106	3	704	21	2	..	182	30	5	..	5	1	86	16	9	..	29	1330	138	159	325	6	9	1933	
Oct.....	65	3	210	39	8	7	125	4	770	32	1	1	198	32	3	..	10	3	250	26	9	..	23	1694	170	120	450	16	11	2294	
Nov. ..	65	3	231	47	17	9	122	2	833	32	2	..	152	28	..	..	8	1	348	23	8	1	29	1817	175	29	511	16	8	2189
Dec. ..	102	5	278	49	16	9	131	3	907	32	..	..	124	17	5	2	25	11	444	67	25	2	30	2107	227	31	576	38	18	2504
Year..	425	20	2408	407	173	108	1328	44	8531	315	9	2	1563	252	43	5	147	76	3060	607	142	8	327	18112	2171	†562	5439	226	144	26578	

* Notified in 5 Districts. † The Diarrhoea total as revised in the Annual Reports is 519.

